Products finishing

Volume 9 | FEBRUARY, 1945 | Number 5

FRED W. VOGEL, *Editor*
(On leave in Armed Forces of U. S.)

ROBERT I. SHORE
Associate Editor

Consulting Editors
BRYANT W. POCOCK
H. LEROY BEAVER

Contributing Editor
C. B. F. YOUNG

Member
CCA

CONTENTS

Eliminating the Old Steel Hot Plate Dryer..... 28
By WALLACE G. IMHOFF

Color Your Postwar Plans..... 40
By JUSTUS HOYT

Copper Plating on Aluminum..... 48

Unique De-Tearing Process Eliminates Dip-Finishing Problems 50
By FRANK V. FAULHABER

News of the Industry..... 66

New Equipment and Materials..... 76

Opportunity Section 98

The Finishing Touch 100

Catalog Library 102

Index to Advertisements.....104

Published monthly by GARDNER PUBLICATIONS, Inc., 431 Main St., Cincinnati 2, Ohio. MAin 0182

DON G. GARDNER
President and General Manager

JOHN M. KRINGS
Advertising Manager

JESSE R. HARLAN
Manager Sales Promotion

G. M. FILLMORE
Eastern Manager
342 Madison Ave., New York (17)
Murray Hill 6-3899

GEORGE H. MEYERS
Western Manager
Tribune Tower, Chicago (11)
Superior 2290

CHARLES H. DEILY, JR.
District Manager
310 West Durham St.
Philadelphia (19)
Chestnut Hill 1198

RALPH M. FRENCH
District Manager
627 Union Commerce Bldg.
Cleveland (14) Main 2866

Printed in U. S. A. Copyright 1945 by Gardner Publications, Inc.

AP CLEANER
FOR PLATERS & FINISHERS

With direct or reverse current, or without electric current, Cowles AP Cleaner does exceptional, time-saving work. *No fuming, no rejects, speed* without reducing quality.

Inexperienced workmen get results with Cowles AP Cleaner. A trial drum will prove it. Prompt shipment.

Cowles

TECHNICAL SERVICE ON REQUEST

THE COWLES DETERGENT CO.
METAL CLEANER DEPT.
7016 EUCLID AVENUE • CLEVELAND 3, OHIO

Products Finishing

Research

The word "research" has been the target of more definitions than have been the lot of many scientific abstractions of even greater ambiguity. Basically, research is not a difficult concept. It is simply a probing into the unknown. When we begin to confuse the probing with the results, however, we complicate the issue no end.

It is generally accepted that all knowledge has resulted from (1) divine inspiration, (2) accident, or (3) research. As long as human beings have inhabited this planet, they have displayed an avid interest in their surroundings. When necessary, they have devised unbelievably ingenious ways of finding out things. It is to their credit that their curiosity has always been insatiable and their adroitness unbounded.

Research may be either (1) pure research or (2) practical research: The only differences are the urgency of the problem and the number of people who will benefit from its solution. What may be pure today, however, may be quite practical tomorrow—a fact which is more evident this year than ever before.

Many are the blind alleys and seemingly hopeless situations which confront the research worker. But there are no impassable barriers to the persistent seeker of truth. Here, as everywhere, success is the reward of perseverance.

Notwithstanding the great and lasting benefits which have accrued from research, there are still, unfortunately, certain individuals who are apparently indifferent to its value. To say that such persons do not have the altruistic viewpoint would be an understatement. They have either lost or have never attempted to cultivate that degree of mental perspective which delineates wisdom. That such individuals do not, as a rule, occupy key positions in the metal-finishing industries is probably the greatest single reason for our success so far in helping to win this war. This is something for which we can be ever thankful.

FEBRUARY, 1945 Vol. 9, No. 5

Eliminating the Old Steel Hot Plate Dryer

By WALLACE G. IMHOFF
President,
The Wallace G. Imhoff Company,
Vineland, New Jersey

This article is the first of a series of three articles on the subject of hot-dip galvanizing to be published in forthcoming issues of PRODUCTS FINISHING. The author is a metallurgical engineer and is also president of a company serving as consultants in zinc coating.

MUCH has been said about what industry will do in the postwar era. The war has developed many new ideas and processes that will be turned to peace-time progress after the war. The hot-dip galvanizing industry will take its place in this march of progress along with all other industries. One of the first pieces of new standard equipment, the old steel hot plate dryer, may "feel the axe" even before the war ends, when the advantages of its elimination are fully understood.

This article will explain the equipment, new methods and techniques which will replace the old steel hot plate dryer. The greatest single source of the galvanizer's troubles has at last been located and definitely traced to the out-moded, inefficient method of drying articles before putting them into the galvanizing bath. To eliminate the dryer, some other better method of drying must be introduced, and that requires an entirely new type of equipment and change in galvanizing operations and modification of the present hot-dip galvanizing process.

Scientific Developments Originate Slowly

Anyone familiar with standard business practices knows and realizes that scientific developments originate slowly, and they also advance step by step in an orderly systematic manner. An advancement in scientific progress has to wait its turn; it cannot push in ahead of its time. So it has been with the old steel hot plate; it could not be eliminated until the liquid flux practice had been developed and operated successfully for ten to fifteen years. The new liquid flux technique is the key that opens the door to a new drying procedure—an entirely different method and op-

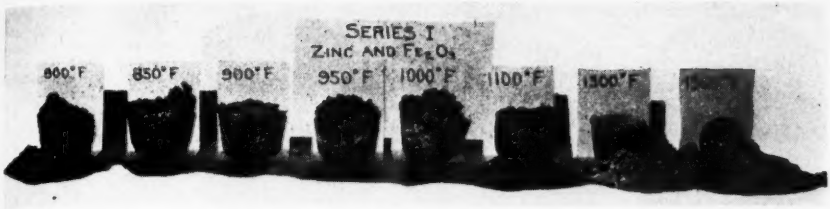


Fig. 1—Molten zinc heated with ferric oxide of iron to produce dross—zinc-iron alloy.

eration than drying with a hot plate.

Corrosion After Pickling Major Source of Galvanizer's Dross

The beginning of the replacement of the old steel dry plate started way back in 1920 when a program of research work was undertaken to explore the various ways that galvanizer's dross is made. It was not until ten to fifteen years later that the results of these investigations were released. The results have been so far reaching that it is well to very briefly review them.

Results Reveal That Iron Oxides and Iron Salts Furnish Iron to Form Galvanizer's Dross

It had been suspected by the author that corrosion on the dryer, iron salts carried over on the work from the pickling baths, and that corrosion after pickling were generating the iron to form the zinc-iron alloy known as "galvanizer's dross." However, it took actual research tests and investigations to prove that the molten zinc at galvanizing bath temperatures and higher was such a powerful reducing agent that it reached up into the flux and dragged the iron down from the flux to form this zinc-iron alloy. In order to definitely prove that the zinc was exerting this powerful reducing action on all iron oxides on the surface of the work passing through the flux box and on all the rust and iron oxides, pickle salts, and so on, a planned set of tests was followed to show that the molten zinc does reduce all iron compounds that enter the flux box and forms the zinc-iron alloy called galvanizer's dross.

The tests consisted of first heating a series of samples of ferric oxide, Fe_2O_3, with molten zinc at temperatures from 800 deg. F. to over 1,500 deg. F., which is far above the hot-dip galvanizing temperature. The second test involved the heating of

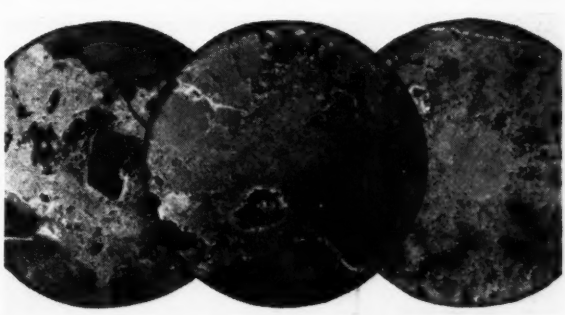


Fig. 2—White areas—dross—zinc-iron alloy as seen under the microscope (magnification, 36 diameters).

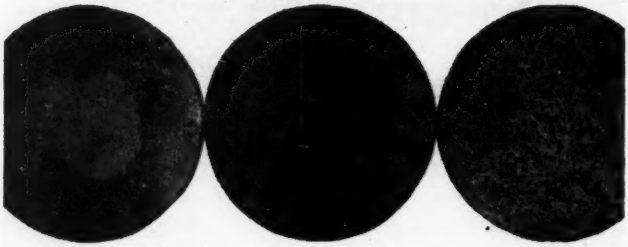


Fig. 3 — White areas of zinc-iron alloy and dross crystals formed in the melt as seen under the microscope (magnification, 36 diameters).

the samples of Fe_3O_4, the magnetic oxide of iron, with molten zinc at temperatures from 800 deg. F. and up to and over 1,500 deg F. The third test involved the use of ordinary roll scale as the material heated with the molten zinc samples from 800 deg F. up to bath temperatures over 1,500 deg. F.

Each test was made in a special iron-free clay crucible, and the temperatures were 800, 900, 950, 1,000, 1,100, 1,300, and 1,565 deg. F. The results of the first series of melts at the various temperatures with zinc and Fe_2O_3 are shown in Fig. 1. Dross, or zinc-alloy, is readily recognizable by the crystal form. Even in solution, the iron gives the zinc a yellowish cast and grainy texture.

Referring to Fig. 1, it is noted that the oxide of zinc shows at the top of the melt at 900 deg. F. It is also noted that after 1,100 deg. F. a very substantial part of the melt has formed a white oxide pile. Looking at the melts under the microscope (Fig. 2), it can be noted that the iron oxide has formed white areas or alloy spots. A large white area can be readily seen in the middle of one sample, which represents the melt at 900 deg. F. Upon following the temperature on up, a very large alloy area is shown formed at 950 deg. F., and finally at 1,000 deg. F., the zinc-iron alloy crystals, or galvanizer's dross, can be plainly recognized. These zinc-iron alloy crystals are clearly shown in Fig. 3 and become larger and clearer as the bath temperature goes higher.

Finally, in Fig. 4 at 1,100 deg. F. is shown the large very clear zinc melt with the zinc-iron alloy crystals (galvanizer's dross) perfectly formed and lying in the zinc crystals. At 1,300 deg. F., the zinc-iron alloy crystals can be seen mixed in with zinc oxide, since at that high temperature the zinc is readily oxidized. Finally, at 1,565 deg. F. the clear cut zinc-iron alloy crystals themselves are shown. Attention is also called

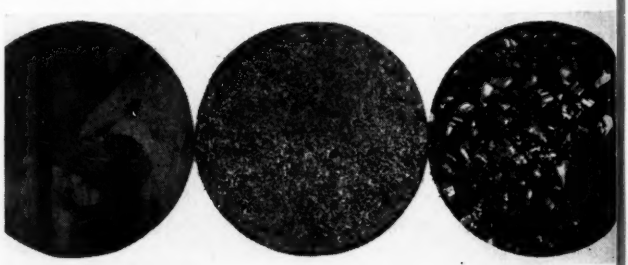
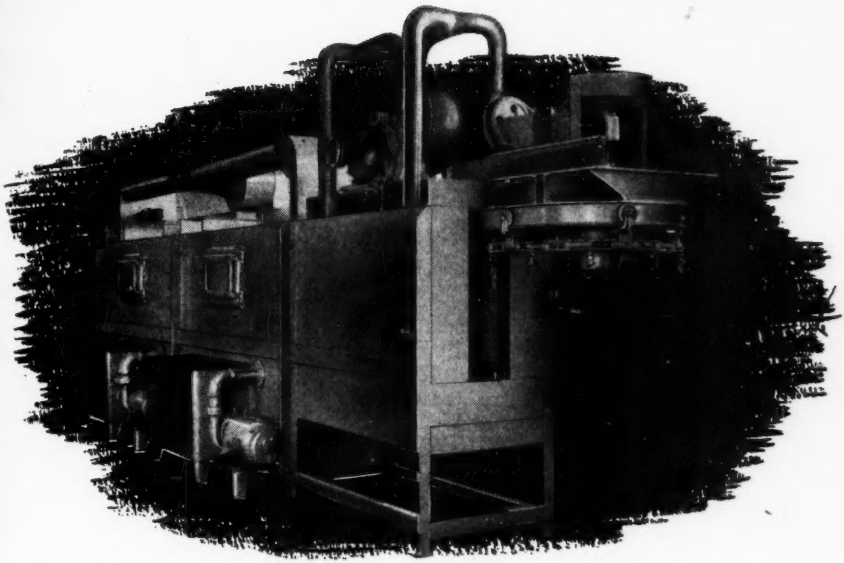


Fig. 4 — Zinc melt at 1,100 deg. F. Clear, easily identified zinc-iron alloy (dross) crystals (magnification, 36 diameters).



A *Clean* Start . . .
---a *Clean* Finish!

THIS A-F Cleaning Machine consists of wash, rinse and dry units for cleaning incendiary bombs. Actually, it will thoro-clean and *speed*-dry any metal product with a 1 ft. x 2½ ft. clearance. A vent system draws out all vapors from wash and rinse sections. The machine can be equipped with swivel carriers to revolve the work while passing through spray and dry sections.

The metal parts and products YOU manufacture can be cleaned *more efficiently* and *economically* in this machine, one of our "standard" machines or in an especially designed piece of A-F equipment. Write today for folders describing A-F Standard and Custom-Built Cleaning and Finishing Equipment or for a frank discussion with an A-F Engineer.

The ALVEY-FERGUSON COMPANY, 624 Disney St., Cincinnati 9, Ohio

Offices in Principal Cities

***Affiliated Corporation:* THE ALVEY-FERGUSON CO. OF CALIFORNIA**
P. O. Box 396, Vernon Branch, Los Angeles 11, Calif.

Alvey-Ferguson

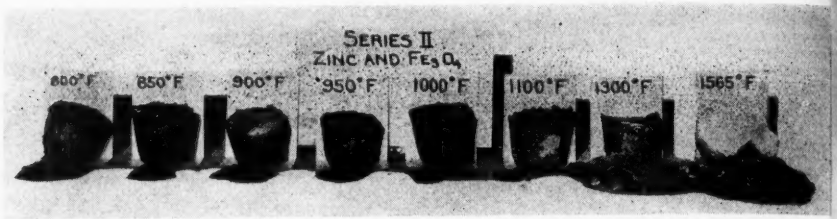


Fig. 5—Results obtained when molten zinc and iron oxide (magnetic oxide) are heated together for six hours and cooled slowly. As indicated, the tests were made at various temperatures throughout the galvanizing range, up to a final temperature of 1,565 deg. F.

to the fact that the zinc-iron alloy crystals at this high temperature have a different crystal form than those below 900 deg. Fahrenheit.

Second Series of Tests

The second series of tests was made duplicating exactly the same bath temperatures and conditions, except the iron oxide used was the magnetic oxide of iron, Fe_3O_4. Rust and soft corrosion are of the type just described; scale and iron oxide on the steel surface may be the magnetic oxide of iron mixed with the first type. Hence, if this magnetic oxide is not all pickled out or off the steel surface, then the question is, will it form dross? The question is answered by the results of the second series of tests, which melts are shown in Fig. 5.

Oxidation of the Zinc Takes Place

Attention is again called to the fact that oxidation of the zinc takes place at 900 deg. F. and, that at 1,100 and 1,300 deg. F., there is a heavy formation of the white zinc oxide. At 1,565 deg. F., the oxide pile is the dark green zinc oxide In Fig. 6, the melts are shown as they appear under the microscope. The zinc-iron alloy crystals can be readily recognized at 950 deg. F. In Fig. 7, the zinc-iron alloy crystals (galvanizer's dross) are seen very clearly and easily recognized. In Fig. 8, the zinc-iron alloy crystals are shown mixed in with zinc oxide. Here again it is clearly indicated that the zinc-iron alloy crystals (galvanizer's dross) are formed with the iron oxide and the zinc melt.

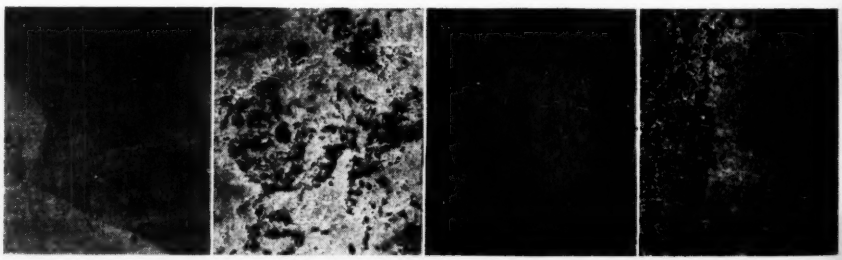
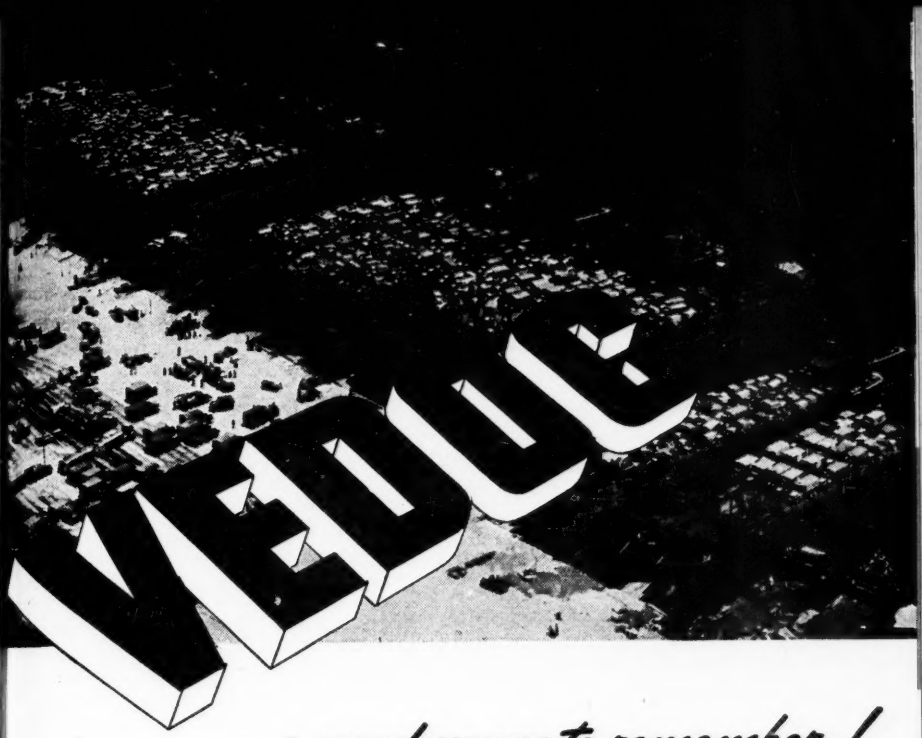


Fig. 6—Zinc and magnetic oxide of iron heated to 800 deg. F. (left), 850 deg. F. (left center), 900 deg. F. (right center), and 950 deg. F. (right). In each case, the mixture was maintained at the maximum temperature for six hours and slowly cooled in the furnace (magnification, 36 diameters).



... a good name to remember!

ARMY E NAVY

In the constant battle against rust and corrosion—in peacetime as in war— it will pay you to remember "Vedoc", an exceptionally fine synthetic finish.

Today, the makers of "Vedoc" are engaged 100% in making war paints. When peace comes, however, they will be ready with a complete line of new and improved finishes . . . for such products as washing machines, refrigerators, kitchen cabinets, other durable consumer goods.

LIQUID PLASTICS DIVISION

FERRO ENAMEL CORPORATION

CLEVELAND 5, OHIO

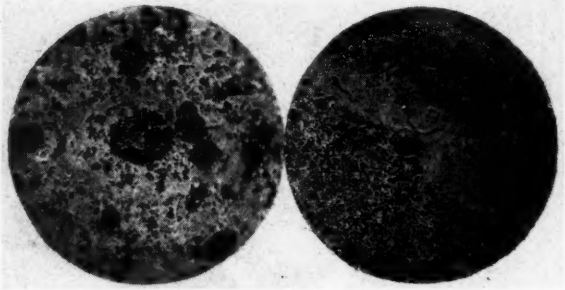


Fig. 7 — Zinc and magnetic oxide of iron heated to 1,000 deg. F. for six hours and slowly cooled in the furnace. The picture at the left was taken at the top of the melt and the picture at the right was taken at the bottom of the melt. Zinc-iron alloy crystals can be plainly seen (magnification, 36 diameters).

Third Series of Tests

The third series of tests was made using zinc and ordinary roll scale. Because of the nature of this scale, its hardness, and the pressure and constitution and conditions under which it was made, it is expected that the reaction or reducing power of the molten zinc upon it is not as great. This is indicated as true in Fig. 9. The evidence can be seen in the piles of zinc oxide which are very small until a temperature of 1,300 deg. F. is reached. This indicates very clearly that as the molten zinc reduces the iron oxide of the corrosion, the oxygen liberated also attacks the molten zinc to form zinc oxide. Therefore, this corrosion condition is not only a heavy dross producer by furnishing the iron to form the zinc-iron alloy (galvanizer's dross), but it also furnishes the oxygen to produce excessive oxide skimmings.

Figure 10 shows the various melts of zinc and roll scale. The small, fine zinc-iron alloy crystals can be easily recognized. The clear usual dross crystal is more readily seen at a higher bath temperature, as in Fig. 11. There can be no doubt now that the roll scale will produce zinc-iron alloy (galvanizer's dross). A still higher bath temperature produces a mixture of the zinc-iron alloy crystals and zinc oxide as shown in Figs. 12 and 13.

Thus, this article has very definitely indicated that any iron oxides from corrosion, any iron salts from the

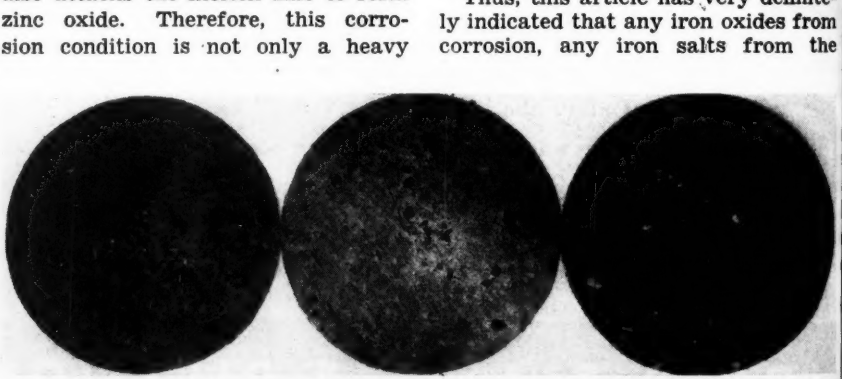


Fig. 8—Zinc and magnetic oxide of iron heated to 1,100 deg. F. (left), 1,300 deg. F. (center), and 1,565 deg. F. (right). In each case, the mixture was maintained at the maximum temperature for six hours and slowly cooled in the furnace (magnification, 36 diameters).

LEANING AND RUST INHIBITING IN ONE OPERATION

ith PENNSALT CLEANER EC-10*

Reg. U. S. Pat. Off.

eparing "blitz cans" for welding pre- ts a tough cleaning problem. Oil and ease must be removed, and the sur- e must be capable of receiving an n weld without rust from the coolant ter used on the welding machine. nn Salt's technical staff helped this nufacturer of "blitz cans" solve problem.

concentration of one part Pennsalt aner EC-10 to 100 parts of water s used in a spray washing machine. is produced a very clean part with ficient rust protection to last until subsequent operation. So satis- factory was the result, that Pennsalt Cleaner EC-10 was promptly re-ordered.

How about *your* cleaning problem? Penn Salt's technical staff is at your service without obligation. Acid, Alkaline and Solvent-Type Pennsalt Cleaners are noted for their ability to solve difficult problems quickly, effectively, economically. Write fully to our Special Chemicals Division, Dept. PF.

SPECIAL CHEMICALS DIVISION PRODUCTS

Acid-Proof Cements • Alkali-Proof Cements • Lead Fluoborate Concentrates • Fluoboric Acid • Acid, Alkali and Solvent Emulsion Type Cleaners • Paint Strippers.

nt Applied for

PENNSYLVANIA SALT
MANUFACTURING COMPANY
Chemicals
1000 WIDENER BUILDING, PHILADELPHIA 7, PA.

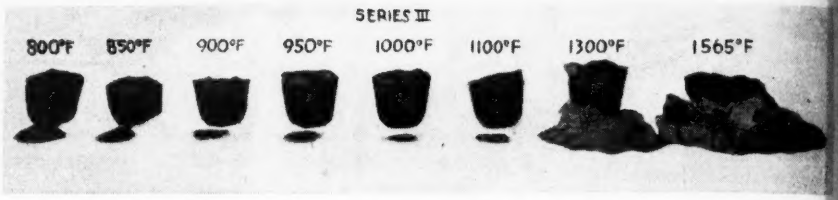


Fig. 9—Results obtained when zinc and ordinary roll scale are heated together and cooled slowly. As indicated, the tests were made at various temperatures throughout the galvanizing range, up to a final temperature of 1,565 deg. F.

pickling baths, in fact, any iron from "sull" rust or corrosion of drying, are immediately reduced by the molten zinc of the galvanizing bath, and thereby furnish the iron to form the zinc-iron alloy which in practice is called galvanizer's dross. In addition, the oxygen released at the same time the iron oxide is reduced immediately attacks the zinc in the galvanizing bath and forms zinc oxide, which in practice is called "oxide skimmings."

Direct Sources of Excessive Zinc-Alloy Formation

Thus, by research, it has been conclusively proved that all corrosion products, iron oxides, and all pickle salts carrying iron, if they are carried into the galvanizing bath, are the direct sources of excessive zinc-iron alloy formation (galvanizer's dross) and excessive zinc oxide on the bath, known in practice as oxide skimmings. These scientific facts are extremely important since when they are definitely known to be true, then measures can be taken and methods and equipment can be developed to stop all iron in any form, except the production itself, from entering the galvanizing bath. Even when these scientific facts are revealed, it still is a very long difficult matter to (1) eliminate all pickle salts, (2) keep down corrosion after pickling, and (3) the most difficult of all practical problems, to dry the work and still not again develop corrosion and rusting during drying.

New Method Available

There is a method now available that has taken the past twenty years to develop and employ satisfactorily, and, due to this method, known as the "liquid flux technique," it now becomes possible to eliminate the old steel hot plate dryer which has been

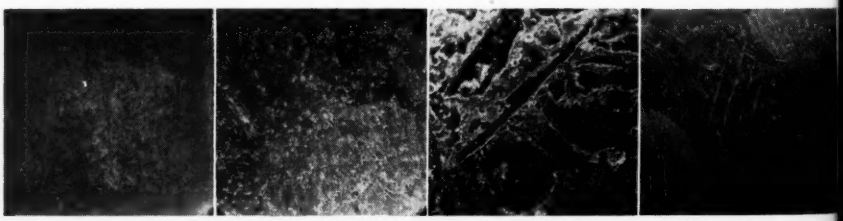


Fig. 10—Various melts of zinc and roll scale. Note zinc-iron alloy crystals (magnification, 3 diameters).

SUN SPIRITS

strips off dirt and oil . . . speeds up output

Don't let slow, costly metal cleaning operations "bog down" production in your plant. Follow the example of this ordnance manufacturer whose output of vital parts began to slump due to faulty cleaning.

Dirty, oily film clung to parts after cleaning with competitive material. Also, the long drying time between washing and the next operation slowed up production of vital parts.

Troubles disappeared when a Sun Engineer suggested a switch to Sun Spirits. Parts now are sparkling clean without spots or dirty film and Sun Spirits dried quicker . . . raised output . . . lowered costs.

Let Sun Spirits help you find the way to easy metal cleaning in your plant. It's fast-cleaning . requires no mixing or heating . . . it's safe. For your copy of "Case Histories of Cleaning Up War Parts" write . . .

SUN OIL COMPANY • *Philadelphia 3, Pa.*

Sponsors of the Sunoco News Voice of the Air—Lowell Thomas

SUNOCO

SUN INDUSTRIAL PRODUCTS

OILS FOR AMERICAN INDUSTRY

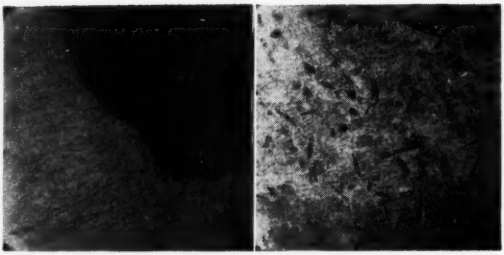


Fig. 11 — Zinc-iron alloy crystals (dross) plainly seen in melt (magnification, 36 diameters).

the major source of corrosion and rusting again after pickling. The liquid flux technique will be covered in detail in the next article in this series.

"Modern Precision." Of interest to industrial men having problems which must be solved through the use of measuring instruments and controls is a 28-page "General Catalog" issue of "Modern Precision"—publication of the Leeds & Northrup Co., 4934 Stenton Ave., Philadelphia 44, Pa.—which briefly describes all L&N products for regulating plant processes. Since so many of these processes depend on close temperature regulation, one section of the publication describes the instruments for measuring by each of L&N's four pyrometric methods; namely, Thermocouple, Rayotube, Thermohm and Optical. For other plant processes, equipment which measures such quantities as pH, speed, gas analysis, and so on, are described. A large chart shows the particular instrument model which is available in each case. Installation photographs show the equipment in service.

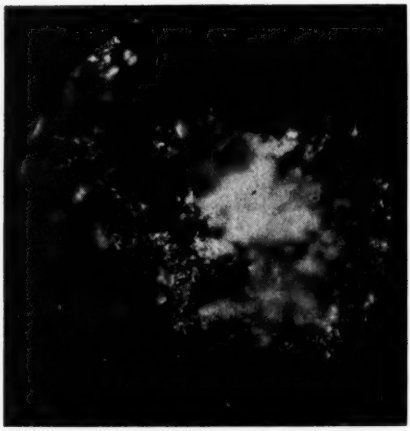


Fig. 13—Zinc-iron alloy and zinc oxide formed at high temperature (magnification, 36 diameters).

Another section is devoted exclusively to a discussion of L&N heat-treating furnaces, with a page describing and illustrating each method — Vapocarb-Hump Hardening, Homocarb Carburizing and Homo Nitriding and Homo Tempering. Also described, in still another section, are L&N laboratory instruments. Copy of Folder ENT(7a) free to mechanical executives addressing requests on their company letterheads.

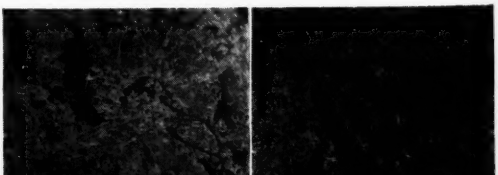


Fig. 12—Small zinc-iron alloy crystals can be clearly seen in the melt (magnification, 36 diameters).

IT'S

VAPOR DEGREASING

WITH TRICHLORETHYLENE!

For economy—for faster production—metal fabricators and finishers use this quick, efficient cleaning method!

1. Thoroughly removes grease and oil from metal parts of any size or shape, often in less than one minute.
2. Produces parts clean, warm and dry—ready for inspection, assembly, further fabrication or finishing of any type.
3. Minimizes finishing rejects because solvent reaches and removes grease and oil from deep draws, holes and almost inaccessible places.
4. Reduces risk of damage to delicate parts.
5. Can be used alone or as a part of a process flow line.
6. Utilizes compact equipment.
7. Consumes only small quantities of solvent. Contaminated solvent is reclaimed economically.
8. Uses absolutely pure vapors of a non-flammable solvent as a cleaning medium.
9. Simplifies cleaning procedure, is easy to operate as a process.
10. Saves time and cost in its own operation, and in the subsequent handling and finishing of parts.

Before Inspection, it's Vapor Degreasing with Trichlorethylene that renders parts warm, clean and dry—ready for the next fabrication or finishing operation. Vapor Degreasing serves also after stamping, machining, threading, cutting, polishing, buffing and quenching. And before many and various finishing operations. Vapor Degreasing works quickly, with maximum efficiency. Yet its only tools are special degreasing grades of Trichlorethylene or Perchlorethylene and scientifically designed equipment. Saves time! Saves labor! Saves cost!

For more information on how VAPOR DEGREASING can serve *you*, send for our new book, "Metal Degreasing—Standard Practices" Just clip the coupon!

CLIP THIS COUPON

E. I. DU PONT DE NEMOURS & CO. (INC.)
Electrochemicals Department
Wilmington, 98, Delaware

DU PONT
REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
...THROUGH CHEMISTRY

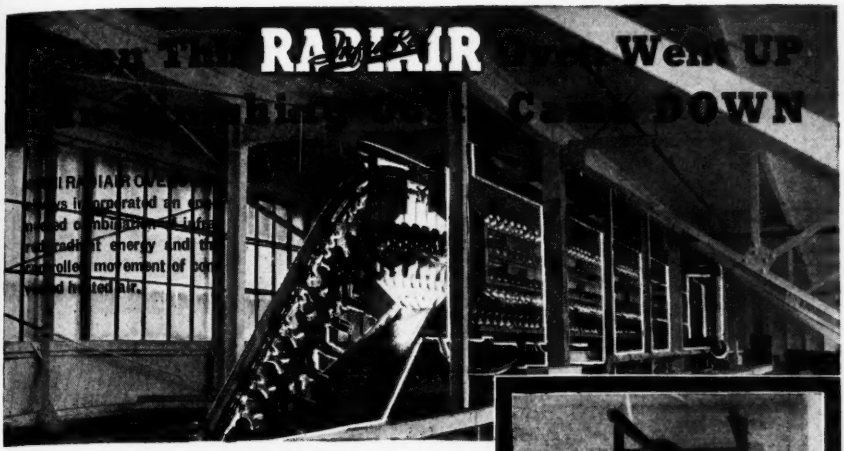
Color YOUR POSTWAR PLANS

By JUSTUS HOYT
Director of Development, Industrial Finishes Division
General Printing Ink Corporation

WHAT is color? It has to do with light waves, frequencies, reflection, absorption, all manner of things that concern the physicist. Most of us are merely aware of it as one of nature's most bounteous gifts and one of man's most treasured experiences. Fortunately it isn't necessary to know what color is in order to put it to work. Like a good many persons, the reader is no doubt beginning to turn at least part of his thoughts these days to his own particular postwar plans. Do they involve color? The role of color in the finishing of metal products is basic, and deserves more attention than has been its lot in the past.

Why is color used? Speaking in very broad terms it serves three primary purposes: (1) it stimulates, (2) it decorates, and (3) it protects. Everyone knows that color attracts the eye and if properly chosen will hold attention and please the senses, thus fulfilling the first two of these functions. Any startling color or combination of colors will attract, but if not properly chosen will fail to please and thus not be decorative.

Arresting eye appeal and a pleasing visual sensation are the primary steps toward the proper use of color as an unpaid salesman working for you. The effectiveness of color in attracting attention is often dependent upon a background or a setting which provides desirable contrast without giving offense. Thus, it becomes important not only to select the color of your product with care, but to give an equal amount of attention to the manner in which it is displayed. It is important in this respect to remember that the human eye is most stimulated and attracted by pure tones. Pure whites, deep opague blacks, and clean bright colors do not have to beg timidly for attention. It is true that bizarre and unusual shades have an esthetic appeal in certain types of merchandising but they cannot compete with strong, clear, well-defined colors in commanding attention. The durability of goods should also be given consideration in color selection. Articles which are soon discarded may wear bold or unusual shades, whereas those things



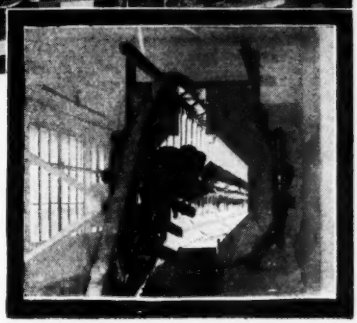
$2880 Savings a Month in Floor Space More Than Paid Its Way

Military jeep, truck and tank production moves along at a fast clip when a contractor like Hayes Industries, Inc., produces 33 vitally needed assemblies every 60 seconds.

Maintaining ahead-of-schedule delivery calls for the finest kind of production planning. When a gas-fired "A" type oven recently loomed up as a potential production bottleneck and fire hazard, Hayes, as might be expected gave infra-red the green light. Because the C. M. Hall RADIAIR oven shown above was designed and applied as a precision production tool—a part of Hayes' in-line production process, maximum time and money saving advantages were realized from the beginning.

Keep up to date on Hall's *productioneered* applications of infra-red . . . they will be vital to industry after the war.

Learn what Infra-Red has to offer you.
Send for "Infra-Red at Work."



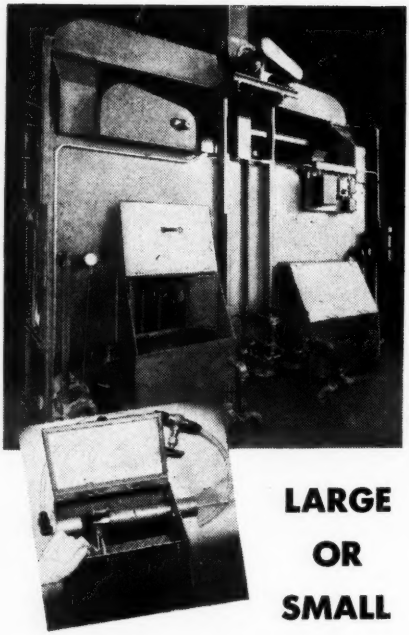
PROBLEM: Former method meant keeping 1000 gallon tank of inflammable enamel close to gas-fired oven baking 1000 fans per hour.

SOLUTION: RADIAIR OVEN designed as part of in-line production system. Fans go from degreaser up to ceiling, are dipped in 400 gallon paint tank and pass through 54 ft. RADIAIR OVEN.

ADVANTAGES: RADIAIR OVEN alone SAVED $2880 A MONTH in vitally needed floor space and eliminated fire hazard. PRODUCTION WAS DOUBLED. Instant infra-red baking ELIMINATED REJECTS AND REWORK due to paint drip on fan blades. PRODUCTION COSTS CUT 17% or approximately 3c per fan. 'Nuff said—the record speaks for itself.

C·M·HALL Lamp Company

1025 EAST HANCOCK ST. DETROIT 7, MICHIGAN



LARGE OR SMALL

. . . a wash for them all

NO part is too large, too small, or too intricate to be cleaned by one of the many types and sizes of American metal wash machines.

Moreover, these machines incorporate many new and exclusive design features and vastly improved washing methods that are enabling users to do a higher quality cleaning job, in far less time, and at lower cost.

We will be glad to have the opportunity to prove that they will do the same for you.

Be sure to write for complete information and literature . . . doing so entails no obligation whatever.

Metal Washing Division

American
FOUNDRY EQUIPMENT CO.

525 S. Byrkit St., Mishawaka, Indiana

with which we must make last for extended periods of time should be finished in colors that have been found to wear well.

Color also protects, though this is not usually given much consideration since it is a hidden function and one which is not primarily a property of hue. All opaque pigments will of course reflect light rays in varying degrees. This keeps them from the underlying surface. Practically all surfaces which are exposed to the weather require this protection. An unpigmented finish exposed to the weather requires replacement much sooner than a pigmented finish since there is no screen or filter to interfere with the destructive rays of sunlight.

Where temperature is a factor, it is, of course, important to take into account differences in heat absorption. Dark shades absorb significantly more heat than light shades, transferring heat to the sub surface and, in turn, to the contents of a container. Thus, a water tank should be painted with a highly reflective finish. Water stored in a tank painted white or aluminum will be maintained at a general level several degrees cooler than water in a similar tank painted black. Yet, how many water tanks do we still see about the countryside finished in black or a dark shade of gray? The same is true in an even more important degree of storage tanks for gas, gasoline, oils, and solvents. It is interesting to note that insurance companies have recently had many claims to settle for broken plate glass which has cracked as the result of absorbed heat of sunlight due to black-out precautions.

It seems almost certain that many useful civilian applications of the principles of controlled infra-red reflectance so extensively used in the modern art of military camouflage will be found in the postwar era. The

PICK ANOZINC® for low-cost, decorative finish

UNTREATED ZINC
—No "life" in the finish—easily tarnished.

CLEAR ANOZINC
— it's got zip — stays clear and bright.

YELLOW ANOZINC
— for applications where a slightly iridescent yellow is desired.

BLACK ANOZINC
—use it where you want a deep, lustrous black.

Unretouched photo shows the slight effect of constant handling over a period of 18 months on pieces treated in the Anozinc bath. Zinc plating identical on all pieces.

When zinc plated parts are finished in a Clear Anozinc bath they keep their sparkle and "zing"—as the photo above shows. It's an inexpensive anodic treatment that retains the appearance of new zinc plating—holds its lustre and attractive appearance—extends its resistance to corrosion and handling—*immeasurably.*

So why use a quickly tarnished finish when this fast, simple procedure will keep your zinc plate dressed up—at low cost? Use the Clear Anozinc bath to produce a finish that's an able pinch-hitter for chromium or cadmium—or wherever better appearance and a more durable zinc surface makes your products more serviceable. Write to the nearest office for further information, giving a brief outline of your application.

OTHER U. C. PRODUCTS AND PROCESSES TO SERVE YOU

CHROMIUM PLATING for wear-resisting, oil-retaining and other types of finishes.

☆**UNICHROME ALKALINE COPPER** for smooth, lustrous copper plating in a non-cyanide bath.

☆**UNICHROME STRIP** for speedy removal of copper, chromium, zinc, etc., from steel and cast iron without etching the base.

☆**UNICHROME RACK COATINGS** specially formulated to stand up under the most severe operating cycles.

☆**UNICHROME STOP-OFF LACQUERS AND COMPOUNDS** specially formulated to meet specific plating problems.

☆**UNICHROME CLEAR LACQUERS** specially formulated to meet specific finishing requirements.

☆**UCILON**—a corrosion-resistant coating for protecting surfaces against acids, alkalies, water, gasoline and various corrosive chemicals.

UNITED CHROMIUM
INCORPORATED

51 East 42nd St., New York 17, N. Y.
Waterbury 90, Conn.
Detroit 7, Mich.

finishing of factory and warehouse roofs, railway freight and passenger cars, trucks and buses, storage tanks, automobiles—in short, anything which is exposed to sunlight and which is normally given a dark color for practicable maintenance reasons—can be accomplished with an eye to reduced heat absorption and consequent lower internal temperatures.

Though color has many protective features, amply demonstrated in nature and called upon with emphasis during times of war for camouflage purposes it is not a property of color which figures prominently in its normal peace-time use. To be sure, the modern safety engineer is making effective use of color in a very practical protective sense--protecting workers from accidents. Actually, it is not in its protective role but rather as a stimulant that color works for us here. The commanding attention of certain colors or combinations which provide an arresting attention serve to warn workers of moving parts, steps, open shaftways, and so on.

But you are asking how can color work for me? How can color have any effect on the sale of my products? Do you make stoves? If you do, do you paint them black? No, of course not, you say, a black stove wouldn't sell. People want them white or finished in light shades. Why do they? The old kitchen range was always black. Well, times have changed, times are changing, and always will be in a state of change. Modern kitchens are light and designed for convenience to ease the burden of kitchen work. The important psychological value of color has been ably and effectively demonstrated in the modernization and liberation of the household kitchen.

But you don't make stoves. Whatever you make there is a right color and it is decided by the buying public and it is your job to find out. How was the color line selected that you now use, or last used before the war upset your business? Who in your organization picked the line and on what basis was the selection made? The first step is to know your market and to analyze the role that color can play in selling your merchandise. There are a number of good consultants who have made a thorough study of the sales value of color as related to various lines of products. If you do not have the information within your own organization it might pay to call on such an agency for advice.

Who buys your products? It is known that men and women have differing color preferences. Children do not agree with elderly people as to the most desirable shades. Basically, the eye prefers clarity and intensity in pure hues. In tints it is most attracted by clearly defined

Now for EVERY WORK SHOP!

NEW Invention Electroplates by BRUSH

Easy to Plate CHROMIUM
GOLD, SILVER, NICKEL, COPPER
. . . For Pleasure and Profit!

If you have a workshop—at home or in business—you need this new Warner Electroplater. At the stroke of an electrified brush, you can electroplate models and projects—you can replate worn articles, faucets, tools, fixtures, silverware, etc with a durable, sparkling coat of metal . . . Gold, Silver, Chromium, Nickel, Copper or Cadmium. Method is easy, simple, quick. Everything furnished—equipment complete, ready for use. *By doing a bit of work for others, your machine can pay for itself within a week.* So make your shop complete by getting a Warner Electroplater right away. Send today for FREE SAMPLE and illustrated literature. ACT AT ONCE!

For
- MODEL MAKERS
- MAINTENANCE
- HOBBY SHOPS
- HOME SHOPS
- SALVAGE PARTS

WARNER ELECTRIC CO., DEPT. A-46
360 North Michigan, Chicago 1, Illinois

DOWN FOR THE COUNT

• When Wyandotte Metal Cleaners step into the ring, the odds are all against that plug-ugly "Fabricating Compound." For each of these products is a specialist at handling the toughest metal cleaning and degreasing jobs.

• Their "manager" is the Wyandotte Representative. He has a cleaner to fill every need — for cleaning after machining and prior to plating, painting, lacquering, blackening, anodizing or spot-welding operations. His products will save you time, money, labor and rejects. Even in the most delicate and precise cleaning operations, they're safe on any surface.

• Don't hesitate to call your Wyandotte Representative at any time. Backed by Wyandotte research and experience, he'll gladly study your process and help you get cleaning jobs done quickly and efficiently.

Wyandotte
REG. U. S. PAT. OFF.

WYANDOTTE CHEMICALS CORPORATION • J. B. Ford Division
WYANDOTTE, MICHIGAN • SERVICE REPRESENTATIVES IN 88 CITIES

shades and rich tones. In-between colors, queer shades, and those which defy visual classification should be avoided. One survey made by the Color Research Laboratory of the Eagle Printing Ink Company, Division of General Printing Ink Corporation, shows the following preference:

Preference For Pure Hues

	Men	Women
First Choice	Blue	Red
Second Choice	Red	Blue
Third Choice	Purple	Purple
Fourth Choice	Green	Green
Fifth Choice	Orange	Orange
Sixth Choice	Yellow	Yellow

Preference For Tints and Shades

	Tints	Shades
First Choice	Blue	Purple
Second Choice	Purple	Blue
Third Choice	Red	Red
Fourth Choice	Green	Green
Fifth Choice	Yellow	Orange
Sixth Choice	Orange	Yellow

There is no quick or ready answer. Different types of products yield best results in different colors. The following list of preferences is offered purely to stimulate the reader's thoughts with relation to his own experiences.

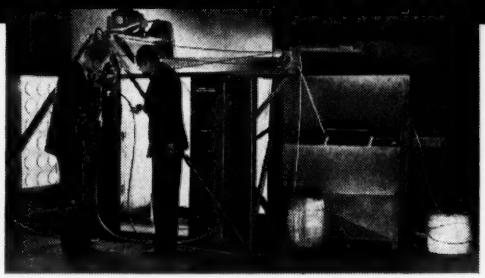
Decorative Enamels

	Company "A"	Company "B"	Company "C"
White	32.7%	36.4%	36%
Cream	14.7%	17.2%	8%
Ivory	10.1%	6.4%	7%
Black	6%	6.4%	7%
Red	5.4%	6.5%	8%
Green	12.3%	9.3%	10%
Blue	6%	6%	6.5%
Tan and Brown	2.3%	2.3%	9%
Gray	2.4%	2.4%	1.5%
Yellow and Orange	2.4%	2.4%	2.5%

In competing for the consumer's dollar today when color plays an important part in the sale, the old saying of "any color so long as it's red" no longer applies. Streamline your colors to hold their own. In coloring your postwar plans think more of what the other fellow likes than of how you want your merchandise to look. He buys it and deserves the choice.

How JENSEN Ingenuity Solved ROPE IMPREGNATION PROBLEM

THE PROBLEM at one of the Country's leading chemical companies was to make rope impervious to salt water and insects for overseas shipment. Jensen solved it with a special dip tank equipped with infra-red lights to keep the solution at 180° F. . . . co-ordinated with a special "Dual-heat" Infra-Red Oven that accomplished drying in 1 minute. ★ Jensen ingenuity makes *tough* jobs *simple*. Write us about *your* problem today!



Rope enters dip tank . . . is held in Infra-Red-heated solution 45 seconds . . . passes through squeegee rollers to remove excess solution . . . enters oven where it is dried by "Dual-heat."

JENSEN SPECIALTIES, Inc. **JENSEN** 9331 FREELAND DETROIT 27, MICH.

DESIGNERS and BUILDERS of "DUAL HEAT" INFRA-RED OVENS • STANDARD and SPECIAL CONVEYORS

SPECIFY "GENERAL CHEMICAL"

PICKLING—Sulfuric Acid—Hydrofluoric Acid—Muriatic Acid—Nitric Acid—Phosphoric Acid—Chromic Acid.

Detergents: Sodium Metasilicate—Trisodium Phosphate—Sodium Silicate—Tetrasodium Pyrophosphate.

RIMMING STEEL—Sodium Fluoride for smoother-surface rimming steel.

COKE BY-PRODUCTS—Sulfuric Acid for making ammonium sulphate; also for washing toluene and benzene, and for treating light oils.

quality chemicals for the metal industry

Casting Cleaning Acid (Hydrofluoric Acid)—Sodium Silicate—Zinc Chloride—Polyacid Fluoride—Chromic Acid—Ammonium Fluoborate—Sodium Fluoborate—Potassium Fluoborate.

Anti-oxidants and Inhibitors • Potassium Fluoride—Lithium Fluoride and Other Welding Fluxes • Fluoboric Acid: Solvent for silica, in cleaning surfaces.

Sodium Cyanide—Sodium Fluoride—Sodium Cyanate—Potassium Cyanate.

Lead Fluoborate—Tin Fluoborate—Zinc Fluoborate—Cadmium Fluoborate—Copper Fluoborate, etc.

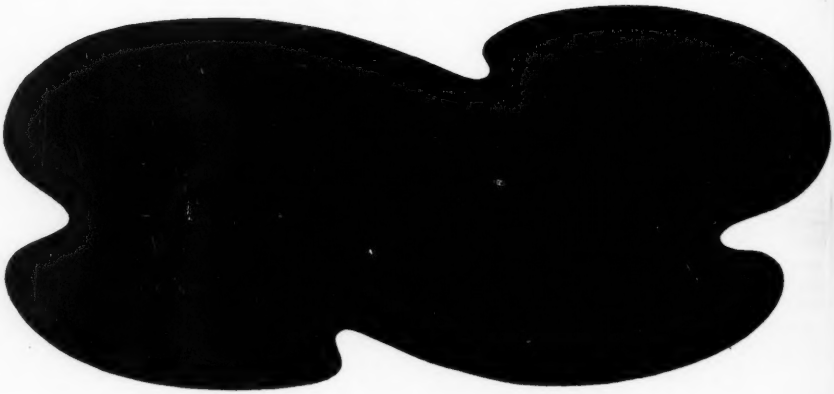
FOR METAL ANALYSES: BAKER & ADAMSON REAGENTS AND FINE CHEMICALS

GENERAL CHEMICAL COMPANY

40 RECTOR STREET • NEW YORK 6, N. Y.

Sales and Technical Service Offices: Atlanta • Baltimore • Boston • Bridgeport (Conn.) Buffalo • Charlotte (N. C.) • Chicago • Cleveland • Denver • Detroit • Houston Kalamazoo (Mich.) • Los Angeles • Kansas City • Milwaukee • Minneapolis • New York Philadelphia • Pittsburgh • Providence (R. I.) • San Francisco • Seattle • St. Louis Utica (N. Y.) • Wenatchee • Yakima (Wash.)

In Canada: The Nichols Chemical Company, Limited • Montreal • Toronto • Vancouver



ACCORDING to an announcement made by the Technical Processes Division of Colonial Alloys Co., Philadelphia 29, Pa., adherent, uniform copper plating is now possible on aluminum and its alloys by means of a simple preparatory dip at room temperature. The dipping solution may be used in a steel, wood, or ceremic container, and, since no fumes are said to be given off, venting is not required. The solution has a long life, is stable, and not sensitive to drag-out, normal contamination, or dilution, it is stated. Practically any copper electrolyte can be used as the plating solution except the sulfate types or those having a high degree of acidity.

Copper plating on aluminum brings greater utility to this light metal. For instance, a flash coat of copper on aluminum eliminates difficulty in soldering the metal. Aluminum also has a strong tendency to develop an insulating oxide coat by mere air exposure. While aluminum itself is a good electrical conductor, this oxide coat growth on its surface reduces conductivity considerably. When aluminum is copper plated, this difficulty is overcome and the light metal becomes useful for electrical contacts and high frequency conductance.

Copper plated aluminum serves as a base for further plating, such as nickel, cadmium, chromium, zinc, and so on. When aluminum is copper plated and polished, it elminates the usual dull aluminum finish. In addition, copper plated aluminum can be used to build up worn surfaces, oversize diameters, and so on. For greater hardness, other metals such as nickel or chromium may be deposited over the aluminum.

Since copper can be colored by various means, copper plated aluminum can therefore be finished in many light, fast colors for decorative and identifying purposes. The process consists of a specified means of aluminum cleaning and preparation, followed by a 10 to 30 second immersion in a simple dipping solution at room temperature and then plating from the known copper plating electrolytes.

Corrosion Problems on Zinc or Cadmium Surfaces?

Test this sample panel in your own laboratory and in your own way. See for yourself how IRIDITE will both PROTECT and BEAUTIFY your product!

MAIL the coupon below for your free test panel of Iridite-protected zinc plating. Give it any corrosion test you want—and watch Iridite stand up. Then you'll know for yourself why Iridite is so widely used as a corrosion-resistant final finish by Western Electric, Anaconda, Martin, Pyrene, Bulova and many other big-name manufacturers.

And remember, Iridite comes in a wide range of colors, giving products that added sales appeal which only attractive color can give. Colors can be clear-lacquered for greater durability!

Finally, in running your tests, bear in mind the quickness and simplicity of the Iridite process. Applied by brief dipping at normal shop temperatures, Iridite dries in a few seconds, permits immediate handling and shipping. No slow-down of fast-moving production lines working to fill war or civilian orders! That's why manufacturers specify Iridite for the zinc or cadmium surfaces of their present and future products!

Use Coupon to Send For This Panel Today!

Half the test panel of zinc-plated steel has been treated with Iridite. Put the entire panel to any corrosion test you choose; then compare the two halves. You'll see for yourself why Iridite meets exacting military and industrial specifications—and why you can't afford to market with zinc or cadmium plated products that don't have Iridite's added protection and attractiveness!

RHEEM RESEARCH PRODUCTS, INC.
IRIDITE
2523 Pennsylvania Ave., Baltimore, 17, Md.

RHEEM RESEARCH PRODUCTS, INC.
802 Chemical Bldg., 2523 Pennsylvania Ave.
Baltimore 17, Maryland
Gentlemen: Please send me a free panel of Iridite-treated zinc plating, full information, and operating details.

NAME..... ADDRESS.....

COMPANY.....

Unique De-Tearing Process Eliminates Dip-Finishing Problems

By FRANK V. FAULHABER

FORESIGHTED management naturally looks hopefully forward to postwar times when, it is considered, business opportunities will be boundless. The enterprising finishing plant, however, will avail itself of current advantages to the utmost, so that it will be miles ahead of the plants biding time. Come postwar, it will be the progressive finishing shops already properly prepared that will be able to do full justice to prevailing potentialities. Rightly ready, they will reap the riches. The anticipating, lagging finishing shops, whose managements were content to ride smugly and snugly along with the flush war times, will operate under terrific handicap trying to pull up and maintain pace with firms in the forefront. Basically wise indeed are the finishing plant executives who not only think about postwar plans now, but who actually start putting plans in action.

An interesting example concerns the application of finishes. It is astonishing how even the largest and most successful companies frequently struggle along with inferior and outdated methods. Varied may the reasons be why their existing facilities are in use. Often, admittedly, it is a matter of necessity. Finishing shops could not always obtain desired equipment and materials. Usually, the best systems available are in force in the leading plants. Yet, even

Fig. 1—In this illustration is shown a dipped piece, with tears and excess material distinctly visible, awaiting the de-tearing process.

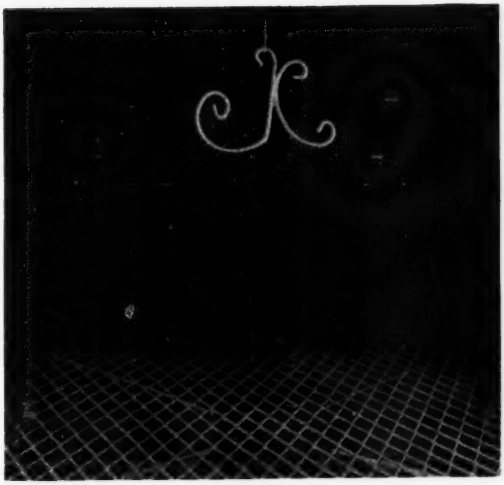


Fig. 2—This illustration affords a vivid demonstration of the de-tearing process in operation. Note how the activated grid underneath the dipped piece veritably draws off the troublesome tears and excess material.

these "best" systems are not always the ultimate ideal; improvements and new and better ways of finishing are steadily being introduced. A concrete instance concerns the automatic removal of tear drops and fatty edges, an ever-irritating, problem-presenting perplexity particularly in dipping and flow-coating finishing methods.

The harried, worried finishing department foreman is well aware of the objectionable tear drops, beads, and fatty edges on dipped and flow-coated work. Such defects have a pronounced retardative effect on a plant's production. It not only hinders the finishing department; often it is a veritable wrench thrown into the entire plant's output, to say nothing of the costly added ameliorating work entailed by the disfiguring tear drops, beads, and edges. The resulting product can, therefore, hardly be termed as representing high-quality workmanship. On the contrary, many times the run of work is in no sense of the word uniform, since how can it be when it is bad enough to have to be worked over?

The resourceful finishing foreman, of course, relies on one or another expedient, such as brushing, to eliminate the detrimental tear drops and fatty edges; or by means of "blotting" on some types of impaired work. A common paint brush is used to brush the tear drops off just as the finished product about ceases dripping and before the finish sets too hard. Blotting is usually resorted to on smaller work. Ordinarily paper towels, or some kindred means of equal absorbing qualities, are laid out over a flat bench or table on which the dripping work is dropped again and again by the operator until some sort of passability is achieved.

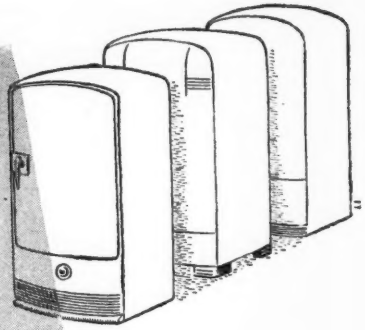
Another avenue to which finishing operators have recourse on some work is to reverse the dipped products, up and down, so that excess material will tend to smoothen out. On smaller work such remedial measures are more readily applicable, but the accomplishments can only be considered palliative. If the corrective mediums are not adeptly undertaken, it will require no acute observer to detect the resident flaws on the finished surface. The finish will not be uniform, and much of the work frequently appears unsightly. The deficient product can hardly be calculated to impress and excite prospects, especially discriminating, discerning, and exacting ones.

Many dipping and flow-coating finishing methods, moreover, are waste-

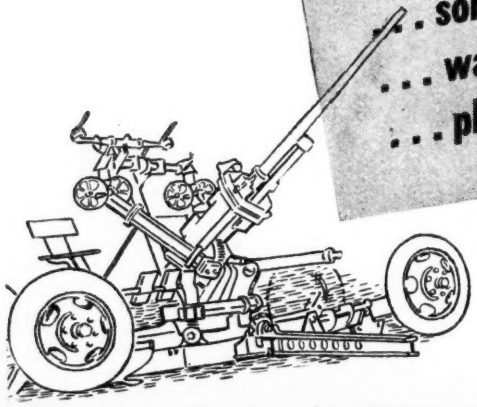
TODAY

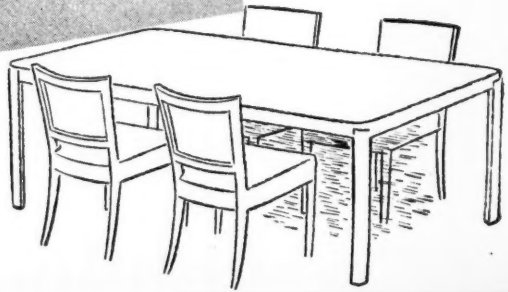
TOMORROW'S FINISHES

. . . something to watch for
. . . wait for
. . . plan for!



TOMORROW





YOU'RE TURNING OUT THE TOOLS OF WAR. Or you're
do the same for you. *Du Pont Research continues*

YOU'RE TURNING OUT THE TOOLS OF WAR. Or you're planning the products of peace. Whatever your finishing problem is, be sure you see Du Pont. *For Du Pont sets the pace in paints.* Du Pont gave industry DUCO and DULUX—now famous for automobiles, refrigerators, furniture, and a host of other products.

Du Pont offers war plants the services of skilled finish engineers, and of our Research Laboratories. Du Pont experts are answering wartime problems in hundreds of industries. They can do the same for you. *Du Pont Research continues to set the pace.*

Tomorrow's Du Pont finishes will be better than ever. New materials and methods due to war have given us new knowledge for formulating and applying finishes. If your peacetime products are in the planning stage, call us in now. Our experienced "know-how" will help you plan the new finishing systems that will keep step with your products-to-be. E. I. du Pont de Nemours & Co. (Inc.), Finishes Division, Wilmington 98, Del.

DU PONT

FINISHES DIVISION

Pacemaker in Paints

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

DU PONT

REG. U.S. PAT. OFF.

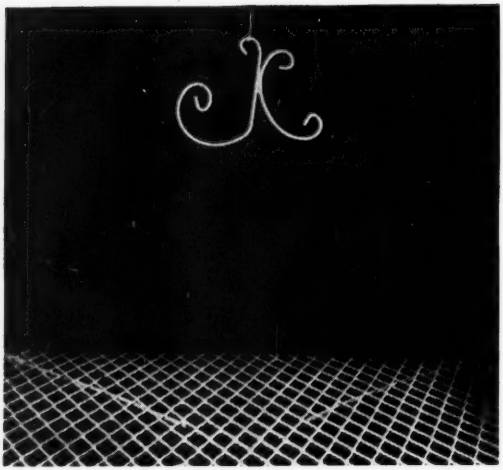


Fig. 3—Completely de-teared, the dip-finished piece now presents a more attractive and cleanly-finished appearance, a vital point in the marketability of many products.

ful of material. This is particularly of significant and vital moment currently when the need for saving materials is imperative in the interests of conservation. It might surprise some finishing plant managements if they ever undertook a survey and determined exactly the vast waste of finishing materials due to inefficient and inferior dipping and flow-coating methods. The losses would stand out as stupendous.

Exigent, additionally, as it is to make the utmost of a finishing plant's reduced available manpower, the management is further handicapped when too much time must be expended touching up and reworking questionable or deficient finishing. Apart from the lack of uniformity in workmanship occasioned by defective dipped work, attendant interruptions and delays to doctor up the objectionable tears and fatty edges will seriously affect finishing operators, who may be directly touched in their pay checks. Uniformity in the shop's schedule can hardly be considered possible; nor can such a production routine be instanced as exemplary, efficient, and successful.

No longer need such retardative and production-halting conditions be tolerated. Available now is a unique and revolutionary method of dipping work to be finished. By this method, the product is dipped in the customary procedure, with the added advantages of an incorporated "de-tearing process." Once the work has appreciably ceased dripping, it proceeds through a region in which a high voltage electric field is established between the work and an electrode. The arrangement of this field is such as to repel excess material from the dipped work, thereby obviating any possibility of unseemly and unbeauteous beads, tear drops, or fatty edges.

Some striking and startling benefits have been enjoyed through the use of this de-tearing process. Noteworthily, on a difficult line of decorative wrought iron stands and wall brackets, hitherto presenting a vexing run of finishing troubles and requiring the employment of extra labor to remove the undesirable tear drops and beads, the quality of the finish was immeasurably improved by this unusual finishing process. Moreover, labor costs have been greatly reduced. In fact, the work previously required to remove tears and to patch defects has now been practically elim-

Notably, the de-tearing and packing labor was reduced to less than one-third its former amount. The removal of excess material before bak-

KIRK & BLUM DUST *and* FUME CONTROL

has Reduced ABSENTEEISM
Stepped-up PRODUCTION
Lowered COSTS

No—Kirk & Blum Dust and Fume Control Systems haven't "won the war." But in their own way, they have *helped*—helped materially—simply by doing the job for which they were intended. Effectively, dependably, they have removed and continue to remove harmful dust and fumes from the air of war plants and *all* types of plants the nation over.

By guarding the health of workers, by reducing absenteeism, increasing man-hours and man-efficiency, K & B *custom-engineered* dust and fume control systems have contributed in a very substantial way to plant economy and the meeting of tremendously increased production schedules.

SEND FOR BOOKLETS:

- *"Dust Collecting Systems in Metal Industries"*
- *"Fan Systems for Various Industries"*
- *"Blower Systems for Woodworking Plants"*
- *"Industrial Ovens"*
- *"Cooling Systems for the Glass Industry"*
- *"Data on Kirk & Blum Production Facilities"*

In both your present set-up and your plans for reconversion, it will pay you to turn *your* dust or fume control problems over to the Kirk & Blum staff of "air engineers"—*specialists* in this important field. Backed by Kirk & Blum's 37 years of experience, our engineers' unbiased counsel and expert planning is your best assurance of true economy and top performance. For further details write to

THE KIRK & BLUM MFG. COMPANY
2816 Spring Grove Ave., Cincinnati 25, Ohio

KIRK AND BLUM

ing made possible the use of urea-base enamels, with their resultant short baking time, excellent color retention, toughness, and adhesion. By reason of this reduced baking schedule, the production capacity of the equipment was increased by 300 per cent. Also of note, more complete and uniform coverage was obtained, for the reason that more viscous enamel and faster solvents can be employed.

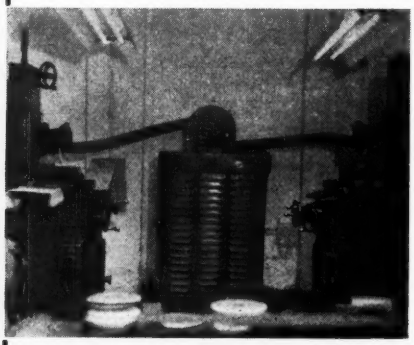
Additionally, experience attests that this improved process functions equally efficient on many finishing materials. Significantly, the fatty edges have been satisfactorily removed from articles fabricated from bakelite, steel, and so on, by the process. Insulating coatings have been applied, such as high dielectic varnishes, latex, and wax, as well as the normal types of organic finishes.

Where a product being coated has obstructions to a uniform flow which cause bridging over, runs and sags, or washing off, it is still necessary to formulate the paint in the customary manner in order to achieve results desirable. The composition of the paint must be such that the material will flow out, leaving a satisfactory finish on the sides of the piece, and flow down to an adequate section from which the electric field can eliminate the excess.

The accompanying illustrations provide laboratory demonstrations of the fundamental workings of the de-tearing process. In Fig. 1 can be seen a dipped piece suspended over a grid, ready for the de-tearing operation. Fig. 2 provides a graphic demonstration of the removal of these objectionable tears by means of electrostatic attraction as the grid beneath the piece is energized. The charged electric field completely draws off the

SMALL • EFFICIENT • INEXPENSIVE • PRACTICAL

Ducon UNIT - TYPE DUST COLLECTOR



for dust control at machines

Dust is a serious health hazard and wears out machinery bearings needlessly. DUCON solves these problems by stopping all dust.

Compactness is combined with efficiency in DUCON design which features multiple numbers of cloth filter bags to provide maximum filter area to air flow.

Filter bags readily cleaned by positive shaker and the dust thus dislodged drops to and accumulates in receptacle pan at bottom of unit. DUCON cloth filter bags last indefinitely providing low cost dust control without constant maintenance.

Complete information given in Bulletin No. 243. Ask for your copy.

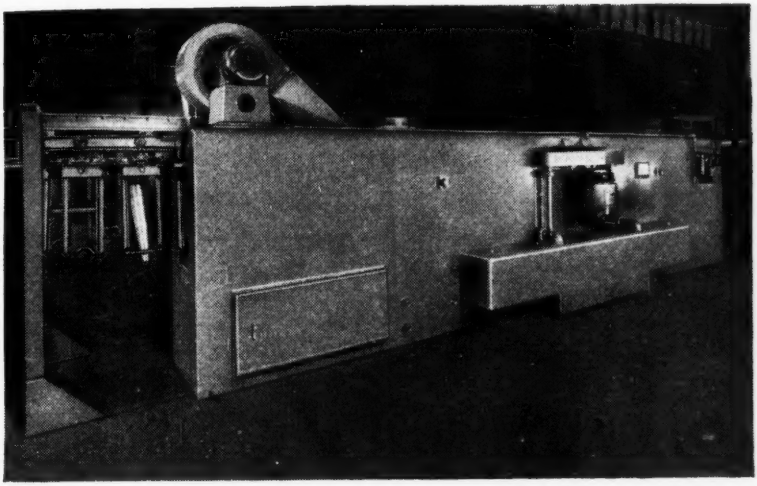
AIR AND GAS WASHERS—CYCLONES
—DUST CONTROL SYSTEMS

The Ducon Company

259 NORMAN AVENUE BROOKLYN 22, N. Y.

Ransohoff

Equipment for the Surface Treatment of Metals



FOR MISCELLANEOUS CLEANING BEFORE PAINTING

RIGHT now, machines like these are more important than ever to prepare light gauge, cold-rolled, pressed steel parts for painting. They enable you to keep production rolling along in first-class shape . . . they prove the importance of modern equipment to cut costs . . . they use least manpower . . . they

WASH, RINSE, RUSTPROOF, DRY BEFORE PAINTING

Photograph (M55) shows machine cleaning projectiles which are delivered to the machine by a conveyor, carried through in pivoted fixtures in which shells register with sprays. After leaving the machine the fixtures can be tilted to load or unload the shells.

RANSOHOFF ENGINEERS *in our plant or in the field will be glad to discuss your cleaning problems.*

N. Ransohoff, Inc.

1311 TOWNSHIP AVE. **CINCINNATI 16, OHIO**

Fig. 4—In this illustration an operator demonstrates the safety factor of a de-tearing unit. Although 80,000 volts are required for operation, the amperage is so low that fatalities are said to be impossible.

beads and fatty edges speedily, safely, and economically.

The time lapse between dipping and the electric de-tearing treatment is governed entirely by the design of the product and the characteristics of the enamel. In Fig. 3 can be seen the same dipped piece free of all blemishing tears and beads. The finished piece is now uniformly and attractively smooth, no hand work for improvement whatever being required. The additional costs previously entailed under other dipping methods to remove resulting tears and beads, and to doctor up the job as good as possible, exceeded the expense of wrapping and packing the processed work.

Specifically, in routing a finishing plant's output, the product is initially dipped, then allowed to drain until the flow of material has substantially ceased. Once the units have been dipped, they may be suspended from hooks connected to an overhead conveyor. Proceeding, the articles pass over an inclined drain board, which receives the excess flow-down that immediately follows. The dipped products then travel ahead until dripping appreciably ceases.

The shape and size of the product and the coating material used have bearing on the flow-down period, some finishes flowing more freely. Nevertheless, in most cases, between two and three minutes is a sufficient interval for successful results.

The work now passes over electrodes on which there is a high potential (approximately 60 kv.) between the electrodes and the grounded piece. The electrode plates are upheld by non-conducting rods and pedestals, thus affording satisfactory insulation. The setup can be arranged to accommodate systematically the type of products being finished. The operator can regulate the electrode distance and the voltage, so that the most desirable field intensity can be attained and the product de-teared properly.

The electrodes are carefully and expressly designed to attract the excess finishing material from the dipped products. Significantly, the length of time required in the charged electric field will, to an extent, be determined by such factors as the radius of the section from which the paint or finish is being removed, the

In war or peace, Pratt & Lambert-Inc. makes good industrial coatings. Doing just that, nearly one hundred years.

PRATT & LAMBERT-INC.
Industrial Finishes
NEW YORK BUFFALO CHICAGO
FORT ERIE, ONT.

conditions of the fatty edges at this period, and the intensity of the field at the drain-off point. In any event under ordinarily favorable conditions, a few seconds will suffice to remove the necessary amount of excess material.

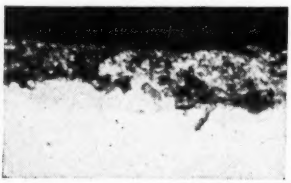
Noteworthily, the power pack constructed to feed the required current to the field will produce approximately 80 kv. and is so designed that it cannot develop more than 5 milliamperes on the secondary. A representative de-tearing installation may supply from 72,000 to 126,000 volts in eight steps and be operated in complete safety. This is of additional importance especially in these ever-changing times with new personnel steadily coming onto the finishing scene.

A typical de-tearing installation includes an oil-immersed voltage supply designed to create the desired repellent field between the piece to be de-teared and the activating electrode. This field has a direct pulsating voltage, the magnitude of which depends upon the character of the product under finish, and usually approximately 80,000 volts. This voltage is applied to the electrodes which, being insulated from the ground, establish the required field between the electrodes and the dipped unit, which, with the conveyor, is at ground potential. The current consumption of a representative installation is on the order of 500 watts.

It is essential, obviously, that the time between dipping and de-tearing must not be so long that the excess material has already set up beyond the point of repulsion when the dipped piece reaches the field, or that the time be so short that the material is still flowing after leaving the field to such an extent as to permit the

FACTS About SYCONIZING With SYCOLOY

SYCO PRODUCTS CO. HOT-DIPPED STEEL PHOTOMICROGRAPH



SYCOLOY APPLICATION SHOWS BOND BETWEEN STEEL AND ALLOY

★ SYCOLOY: A lead-base hot dip alloy BONDS with steel. One Dip Process.

★ Application of .0003 to .001 gives almost double protection against corrosion due to the BONDING quality of SYCOLOY.

★ 200 Hour Salt Spray Test on Production Parts.

★ Paint, Lacquer or Chrome applied direct to SYCONIZED steel requires no previous preparation and WILL NOT CHIP. *Investigate Today.*

IT BONDS IT PENETRATES IT LUBRICATES

SYCO PRODUCTS COMPANY

5-220 General Motors Bldg. Detroit 2, Michigan

Hammond of Kalamazoo

NEW! FOR INCREASED PRODUCTION . . . LOWER COSTS

Hammond's FOR OVER 60 YEARS

Symbolizes, to us, the goodwill and confidence of the many thousands of friends we have been privileged to serve. We shall always strive hard to maintain this respect by continued improvement of Hammond Products—now recognized as

The most complete line of

POLISHING LATHES

SINGLE or VARIABLE SPEED
ALSO
AUTOMATIC FINISHING
CYLINDRICAL FINISHING

GENERAL PURPOSE
CARBIDE TOOL
ABRASIVE BELT
GRINDERS

Hammond's TWO-SPINDLE VARIABLE SPEED POLISHER

Triple Threat Versatility . . . **POLISHING . . . BUFFING . . . COLOR BUFFING**

Lowering costs and increasing production means that a machine must be engineered and built to do its particular job right. Hammond's New TWO-SPINDLE Variable Speed Lathe, Model VRRO, does just that and brings within its scope a wider range of polishing and buffing operations. Each spindle with its own motor, starter combination brake and switch, and conveniently located speed control dial on top of the lathe permits each operator to work independently of each other. One operator continues his production without interruption while the other changes wheels or runs his wheel at the most efficient peripheral speed for the particular operation he is doing. Spindle speeds are obtainable instantly by merely turning the dial atop the lathe and speeds are infinitely variable from 1500 to 3000 RPM. This new TWO-SPINDLE, Model VRRO, Variable Speed Lathe complements the Hammond Single Spindle, Model VRO, Variable Speed Lathe. Write for complete information and put them to work for you soon.

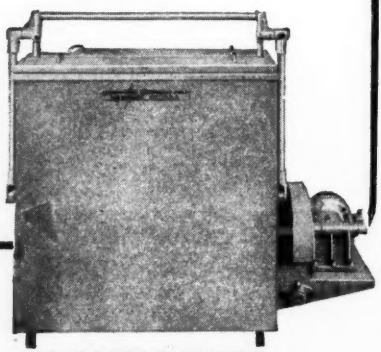
Hammond Machinery Builders INC

1622 DOUGLAS AVENUE • KALAMAZOO 54, MICH.

EASTERN BRANCH 71 WEST 23rd ST., NEW YORK 10, N. Y.

Absolutely
CLEAN METAL PARTS
with
"STURDY-BILT" *SIMPLEX*
METAL CLEANING EQUIPMENT
Removes OILS, GREASE, CHIPS, ETC.
LOW COST OPERATION
Write for details
Sturdy-Bilt Equipment Corp.
Dept. P2 West Allis 14, Wisconsin

- SIMPLE • COMPACT MECHANISM
- A time-proven idea developed into Modern Equipment.



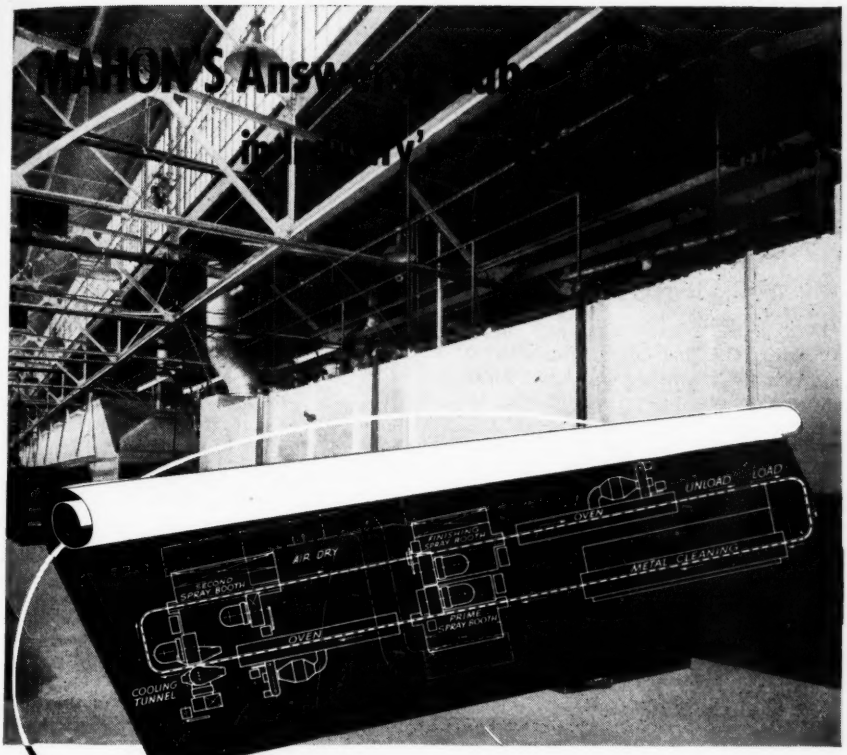
reformation of fatty edges or tears. It is likewise requisite that the de-tearing time be sufficiently long to remove the objectionable beads or all excess material properly.

To illustrate, on a representative operation for dipping and de-tearing a $\frac{3}{16}$-inch rod with a ½-inch loop on the downward end, variations from 3 to 16 inches may be appropriately made in the electrode distance, the de-tearing time ranging from 2¼ to 8 seconds and the interval between dipping and de-tearing from 2 to 4 minutes.

Efficient finishing results, as objectified for in the best modern production plants, can be obtained over a wide range of several variables. The wide tolerances in the various factors make the operation of a de-tearing outfit relatively simple, once the apparatus it properly designed and installed for a given set of conditions.

Figure 4 comprises a graphic demonstration of the relative safety of the de-tearing equipment. The operator is shown holding a dipped piece directly above the activating grid charged with the required 80,000 volts for the de-tearing process. The amperage is said to be so low that a fatality would not be possible.

In addition to making possible the dipping of pieces that otherwise would have to be sprayed, the de-tearing process allows for wider range in the formulation of dipping materials. Verily, the paint chemist can formulate finishing materials now without regard to fatty edges or tears. In a goodly number of instances this will make possible a shorter bake schedule. The finished work can be baked in an oven 10 minutes at a temperature of 300 deg. F. or given an infra-red bake. Time, trouble, labor, and paint costs are said to be reduced to a minimum. In addition, thousands of gallons of scarce finishing material can be



Coordinated finishing systems

Shortage of skilled labor is the most vital problem confronting industry today—a problem that is constantly growing more acute as the demands of our fighting forces absorb additional men.

In the Finishing Departments of many war production plants, Mahon engineers have accomplished some exceptional results toward combating this labor shortage. Increased production with decreased manpower is continually being achieved by the institution of more modern finishing methods —by revision and re-arrangement of plant and production layouts—by replacing obsolete and inefficient machinery with *faster* and *better* equipment.

Your entire FINISHING problem—cleaning, rust-proofing, painting, drying and baking—can be turned over to Mahon's engineering staff with complete confidence. The Mahon organization, backed by years of research and practical experience in this highly specialized field, can be depended upon to do a thorough engineering job in the designing and building of ultra-modern Finishing Equipment. Mahon installations have established remarkable records in boosting production output—with less men—in less time—at less expense.

THE R. C. MAHON COMPANY
DETROIT 11 CHICAGO 4

Manufacturers of Metal Cleaning Machines • Rust Proofing Machines • Hydro-Filter Spray Booths • Ovens of All Types • Filtered Air Supply Units • Hydro-Foam Dust Collectors—and Many Other Units of Special Production Equipment—including Complete Finishing Systems

saved. In some cases, the process also makes possible the use of faster solvents and more viscous coating materials, so that a more nearly complete hiding may be attained in a single dipping operation.

Soap in Linotype Degreasing

BECAUSE of the shortage of benzine, the use of trichloroethylene has been recommended. This solvent may be used alone or mixed with benzine in equal proportions as a satisfactory degreasing agent for linotype matrixes. An apparatus for this purpose employs sieve-like baskets.

Prior to solvent treatment, the matrixes are first immersed in a soap solution. Following this soap treatment, the matrixes are repeatedly immersed in trichloroethylene or its mixture. For drying the matrixes, the temperature may be increased up to 80 to 90 deg. C. The trichloroethylene may be recovered, thus making the soap-solvent degreasing process a rather economical one.

"How to Plan Your Postwar Air Conditioning Today" is the subject of a 16-page illustrated booklet announced by Westinghouse Electric Elevator Co., 150 Pacific Ave., Jersey City 4, N. J. The booklet tells how air conditioning works, outlines the principal factors which must be considered to plan air conditioning for a specific application, and pictures and describes equipment, including compressors, condensers, units and coils.

Installation photographs illustrate the three general types of air conditioning equipment—self-contained factory-built within-the-space units, self-contained factory-built central-plant units, and custom-built central-plant units. Copy of booklet free upon request.

SPARKLER FILTRATION

"The Horizontal Plate Method" eliminates bumpy finishes and rejects, because every particle of foreign abrasive matter is removed from plating solutions.

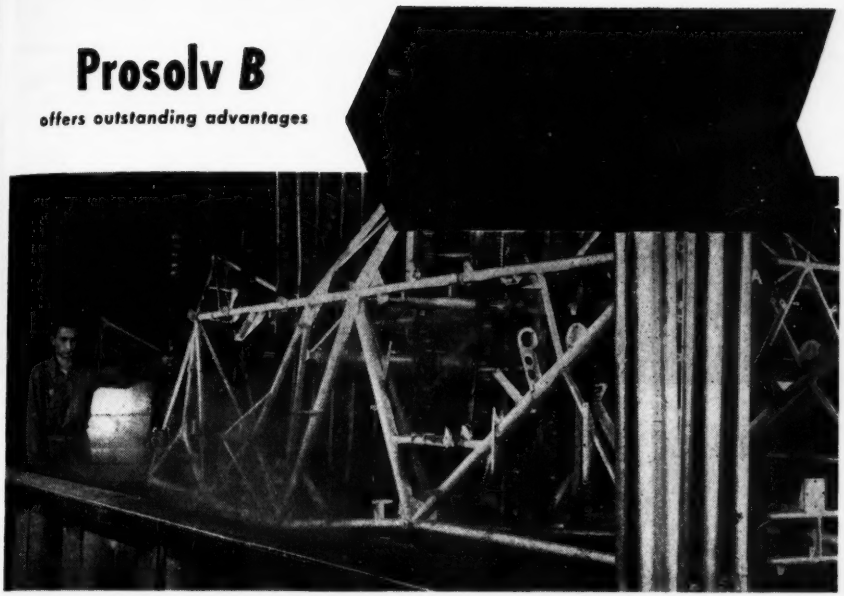
Our field engineers will gladly help you with your filtration problems. Write us.

SPARKLER MANUFACTURING CO.
254 LAKE STREET MUNDELEIN, ILLINOIS

SPARKLER HORIZONTAL PLATE FILTERS

Prosolv *B*

offers outstanding advantages



Approved for The Bullard-Dunn Descaling Process

Equally effective in still tank and electro-cleaning

So positive are the advantages of Turco Prosolv *B* that prominent electroplaters have switched to this new cleaner immediately following tests *although they had considered satisfactory the materials they had been using.*

Turco Prosolv *B* insures the chemical and physical cleanliness that is essential to 100% bonding to steel of zinc, cadmium, chromium and other plate. It removes every trace of oil, grease, smut, paint and rust preventive compound. It contains no soap; leaves no deposit. Rinsing is complete, even though parts may have dried.

A highly concentrated product, Turco Prosolv *B* is 100% active. Every particle works; there is no waste.

As this new cleaner is effective in both still tank and electro-cleaning, it simplifies stocking and plant procedure where both processes are employed.

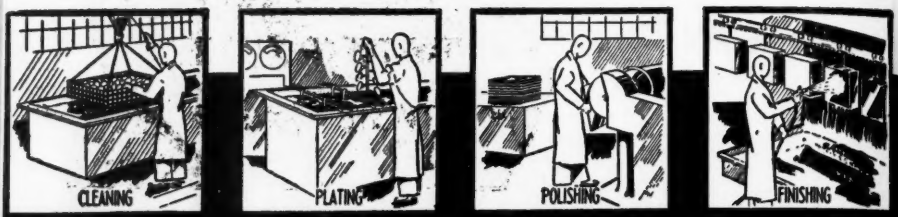
Try Turco Prosolv *B* for stripping tin deposits formed during The Bullard-Dunn Descaling Process. A standard cleaning tank may be used for this.

Call the Turco Field Service Man for details on this specially formulated electro and still tank cleaning material which is doing such a notable job the nation over. Write for Bulletin PF-12.

Turco

INDUSTRIAL CHEMICAL COMPOUNDS

TURCO PRODUCTS, INC. *Main Office and Factory:* 6135 S. Central Avenue, Los Angeles 1 • 1606 Henderson St., Houston 10, Texas • 125 W. 46th St., Chicago 9, Illinois • *Stocks in All Principal Cities*



News of the Industry

New Formax Representative

According to an announcement made by Howard J. McAleer, president of Formax Manufacturing Company, Lawrence F. Griffin, 132 Avon Ave., Stratford, Conn., has been appointed New England representative for this concern.

Lawrence F. Griffin

Mr. Griffin was graduated from Technical High School, Waterbury, Conn., and attended Yale, specializing in surface finishing and metallurgy. He has worked for the Bridgeport Brass Company and also had charge of zinc plating at General Electric, Bridgeport, Conn. Mr. Griffin has had a varied sales engineering experience, selling polishing and buffing compounds in all the New England states and is now working in cooperation with the Formax New England distributors, MacDermid, Inc., Waterbury, Conn., and Sessions-Gifford Co., Providence, R. I., who carry local stocks of Formax products.

DeVilbiss Spray Painting School

Four one-week classes will be held for industrial finishers in the first half of the 1945 School of Spray Painting to be conducted by The DeVilbiss Co., Toledo 2, Ohio. Sessions starting January 15th, March 12th, April 16th, and June 18th, each including the same classroom instruction and shop work, will be open to all regular users of DeVilbiss spray painting equipment.

Leuck Appointed Director of Research

According to an announcement received, Gerald P. Leuck has been appointed director of research of Glyco Products Co., Inc., 26 Court St., Brooklyn 2, New York. Dr. Leuck received his Ph.D. at Northwestern University and was formerly with The Miner Laboratories of Chicago, where he did considerable work on carbohydrates and their derivatives, proteins, polymers, adhesives, and so on.

In his new position Dr. Leuck will complete and extend the postwar problems instituted by Glyco. In this connection, he will form a new research and development laboratory staffed by chemists with extended experience in the rubber, paint, and plastic industries.

UNICHROME*

COATING 202

Gives Extra Protection in Strong Plating Baths

With Unichrome Coating 202 on your racks, even the toughest solution won't get to first base. Especially durable when force dried, it sticks to plating racks and fixtures *longer*—resisting even severe anodizing baths and strongly alkaline solutions. What's the reason? It's formulated of special resins that have shown maximum chemical resistance under actual shop conditions.

And although these resins are in great demand for other war uses today, there's been no change whatever in our formula. So start using this current-saving insulation now. Write for prices or a trial order.

* Reg. U. S. Pat. Off.

PROPERTIES

Chemical Resistance—Excellent for all plating cycles.

Toughness—Withstands repeated flexing and shop handling—cuts cleanly and easily at contacts.

Drying—Dipped at room temperature in container in which it is shipped—force dried at 200°F. for extra protection.

Adherence—Excellent for severe cycles. For moderate cycles "Air Dry" Coating is recommended.

UNITED CHROMIUM, INCORPORATED

51 East 42nd St., New York 17, N. Y. • 2751 E. Jefferson Ave., Detroit 7, Mich. • Waterbury 90, Conn.

TRY THESE OTHER UNICHROME MATERIALS

Unichrome "Air Dry" Rack Coating—a rack insulation that can be dipped and dried at room temperature, for use in all plating solutions

Unichrome Quick Dry Stop-Off 322—for cyanide copper and other plating work requiring an extremely adherent stop-off

Unichrome Quick Dry Stop-Off 323—for chromium and other plating work requiring a stop-off that can be peeled off after use.

Unichrome Resist—a solid insulating material for constructing composite racks, stop-off shields, insulating gaskets, etc.

Kushner Resumes Consulting Duties

Joseph B. Kushner, well known metal-finishing expert, announces that he is now back, full time, at this regular consulting offices at 233 W. 25th St., New York City, after a leave of more than a year and a half spent in special work at Columbia University. He is now able to devote all his time to development, research, and consulting work in the fields of plating plant design and installation and general electrodeposition.

Joseph B. Kushner

Mr. Kushner's specialties include the streamlining and standardization of plating plant processes for both war and postwar setups and the design and development of automatic equipment for handling difficult plating work on a volume basis.

New Detergents Company Formed

The Optimus Detergents Company has been organized and is in operation at Matawan, N. J., manufacturing industrial detergents and developing new cleaning methods for industrial use in its research laboratory and pilot plant.

The Optimus Detergents Company will also have available the facilities of its associate, Optimus Equipment Company, so that cleaning methods to be followed can, where needed, be utilized and developed with the aid of specialized cleaning equipment.

The Optimus Detergents Company and Optimus Equipment Company function in close affiliation with the Hanson-Van Winkle-Munning Co., also of Matawan, New Jersey.

Director of Public Relations Appointed at Carborundum

Arthur Batts, president of The Carborundum Co., Niagara Falls, N. Y., announces the appointment of Francis D. Bowman as director of public relations. For many years Mr. Bowman has served as advertising manager of the company and in that capacity became well known in industrial advertising circles. During his long service in handling the advertising, Mr. Bowman also devoted much of his time to public relations activities.

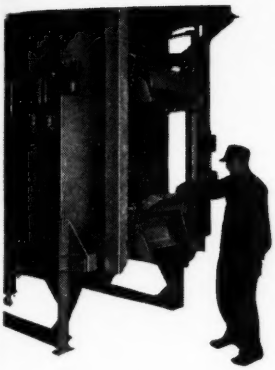
The advertising department of The Carborundum Company has been consolidated with the merchandising department and all industrial advertising will be in charge of M. S. Ireys, director of merchandising, with Mr. Bowman continuing to direct the company's advertising in national mediums.

THE OUNCE OF PREVENTION WORTH POUNDS OF CURE!

NU-LITE { PLASTIC SLEEVES GLOVES *and* APRONS

• Low cost, light weight protection can boost production in your shop. Only 1/7th the weight of ordinary protective items—NU-LITE gloves, aprons and sleeves mean worker comfort . . . help control dermatitis induced by industrial irritants. Plastic fabric has remarkable resistance to water, oils, gasolines, acids, alkalis, degreasing and plating solutions. Write for prices, samples, complete information.

NU-LITE MANUFACTURING COMPANY
DEPT. PF *Plastic Development Consultants* **VERONA, N. J.**



WHEN VICTORY COMES

Let BLAKESLEE Experience in Peace and War Solve your Degreasing Problems . . .

There'll be no reconversion headaches if you depend on Blakeslee degreasing engineers and Blakeslee degreasing equipment. In scores of plants where Blakeslee units are now serving on war production, they will prove easy to adapt to new parts. In the Blakeslee plant there will be no shutdown for reconversion because degreasers have been among our leading war products. Let our degreasing engineering specialists cooperate with you on your reconversion plans.

G. S. BLAKESLEE & CO.

Main Office and Plant: Cicero Station

CHICAGO 50, ILLINOIS

NEW YORK **TORONTO, ONTARIO**

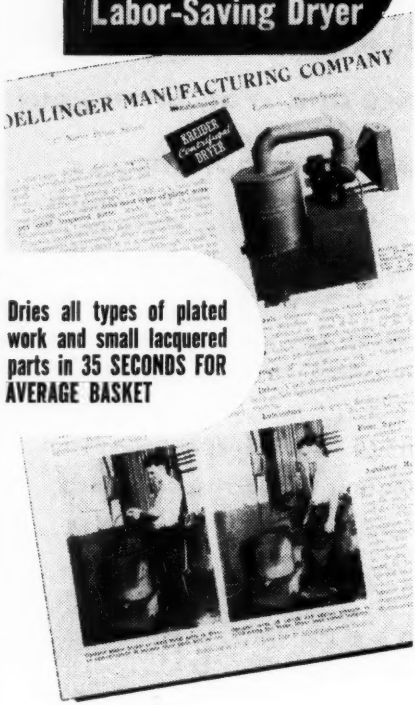
BLAKESLEE

Solvent Vapor **DEGREASERS**

Metal Parts Washers

Standard Units and Specials ENGINEERED for YOU

Get Full Information on This Time-Saving, Labor-Saving Dryer


DELLINGER MANUFACTURING COMPANY
KREIDER Centrifugal DRYER
Dries all types of plated work and small lacquered parts in 35 SECONDS FOR AVERAGE BASKET

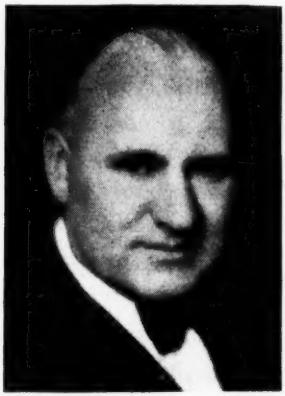
THIS data sheet will give you complete specifications on the fast, economical *Kreider Centrifugal Dryer*—the modern drying outfit that speeds production . . . improves plating quality . . . requires only one operator. *Write for it today.*

DELLINGER MANUFACTURING COMPANY

729 N. Prince St., Lancaster, Pa.

G-E Forms Chemical Department

A new department in the organization of the General Electric Company, to be known as the Chemical Department, has been created by the board of directors. Dr. Zay Jeffries, technical director of the company's Lamp Department, has been elected as vice president in charge.



Dr. Zay Jeffries

The new Chemical Department will assume responsibiity for the operations pertaining to the Resin and Insulating Materials Division and the Plastics Division of the Appliance and Merchandise Department.

New Distributor Setup

Mixing Equipment Co., Inc., Rochester, N. Y., manufacturer of "Lightnin" portable mixers and heavy duty "Mixco" agitators, announces changes in its sales organization.

The Emerson Scheuring Tank & Manufacturing Company of Indianapolis, Ind., will act as representative for Central Indiana. The White Industrial Sales & Equipment Company of Cincinnati, Ohio, will represent the company for Southern Ohio, Northern Kentucky, and the Western part of West Virginia including Charleston. The portion of the West Virginia territory was formerly handled by the Moorhead Co., Pittsburgh, Pa., and the New York City office of Mixing Equipment.

A Dependable Combination

FOR FULLY AUTOMATIC CONTROL OF ANODIZING POWER SUPPLY

The new G-E "2000" copper oxide rectifier is hard to beat for smooth, steady, direct current needed for anodizing. When used with the new G-E fully automatic voltage regulator, it offers dependable, completely automatic control of anodizing power supply. To start the anodizing all you do is press a button. When the film is formed and the load is ready for removal, the system shuts off automatically—it's as simple as that. Accurate timing and control is maintained by electrical means which eliminates any chance of failure on the part of the "human element." This is just one of many rectifier-regulator combinations offered by G.E. for controlling anodizing or plating power supply.

A single G-E "2000" rectifier offers 12-kw output capacity. Two or more of these rectifiers connected in series, parallel or series-parallel will provide practically any voltage and amperage required for anodizing or plating. For more information about G-E rectifiers and regulators see your nearest G-E Merchandise distributor or now, while you think of it write to Section A251-70, Appliance and Merchandise Dept., General Electric Company, Bridgeport, Conn.

BUY WAR BONDS AND KEEP THEM

GENERAL ELECTRIC

New England Office Opened

The Maas & Waldstein Co., Newark, N. J., manufacturer of industrial finishes, announces the opening of a New England office at 6 Jersey St., Boston, Mass., under the supervision of George F. Melanson, sales engineer. Mr. Melanson's territory includes Rhode Island, eastern Massachusetts, lower New Hampshire, and Maine.

Equipment for use in demonstrating finishing materials and for helping solve production problems has been installed in the Boston office of the company as an aid to New England users of finishes.

Pyrene Forms New Organization

A new industrial research and development organization, the Pyrene Development Corp., Newark, N. J., has been formed as a subsidiary of the Pyrene Manufacturing Company, also of Newark, maker of fire extinguishing equipment. The officers of the new organization, drawn from the executives and directors of the parent company, are Charles G. Durfee, president, Edward J. Waring, vice president, and Edward A. Clapp, secretary and treasurer.

Bricker & Andes Appointed Sales Agents

Bricker & Andes, 316 Atlantic Ave., Brooklyn, N. Y., has been appointed sales agent and distributor of the inhibitors and metal-working chemicals for the American Chemical Paint Co., Ambler, Pa., to expedite the service and supply of these materials to the metal-working industries in the New York City Metropolitan Area.

The territory covered by Bricker & Andes consists of Manhattan, Kings, Queens, Richmond, Bronx, Nassau, Suffolk, Westchester, and Rockland counties in New York state and Hudson, Essex, and Union counties in New Jersey. The experience of the technical staff of Bricker & Andes will supplement the co-operation of the American Chemical Paint Company s technical staff and laboratories in the solution of chemical metal-working problems.

TRIPLE RINSING EFFICIENCY!

—and save power with this new Tri-Chambered Washer

A basically improved washer for cleaning metal parts with emulsifying or alkali cleaner. Has heated solvent tank, drain board and two heated rinse tanks. No. 1 water rinse removes most of dirt and oil—so No. 2 water rinse with controlled water flow is not contaminated by oil. Actual production tests prove this arrangement increases rinsing efficiency and reduces power costs.

Send for Free Catalog

Write today for complete specifications and prices —also for complete Phillips Catalog of engineered metal cleaning equipment for all purposes.

PHILLIPS MFG. CO., 3440 W. Touhy Ave., Chicago, Ill.

YOU would not select a horse and buggy for your present day transportation needs, so why accept the ordinary black oxidizing salt when the improved dehydrated BLACK-OX penetrating salt is now available at tremendous savings.

- BLACK-OX is "*THERMOSEALED*"* to guarantee constant uniformity in performance and color, as well as maximum penetration and rust-resistant protection at lower operating cost.
- BLACK-OX is a tough, durable, black-oxide finish that does not peel, chip, crack or rub off.
- BLACK-OX is factory as well as laboratory tested and backed by years of successful diversified shop application.
- Keep pace with progress at our expense. Order your no charge trial shipment today.

*TRADEMARK "THERMOSEALED" REG. U. S. PAT. OFF.

BLACK-OX CHEMICAL COMPANY
113 EDISON PL. • NEWARK 5, N. J.

Udylite Personnel Changes

L. V. Nagle, national sales manager for the Udylite Corp., Detroit, announces the following changes in personnel in the company's current expansion program.

Jack Hoffman, formerly manager of the Cleveland territory, has been transferred to the Detroit office to head the newly organized commercial filter division. Bert Lupien, formerly Michigan representative for the corporation, has been made manager of the Cleveland territory. Joe Hoefer, formerly with Udylite, returns to the corporation to become sales and service engineer for the Michigan territory in the position left by Mr. Lupien. Leonard Singer, engineer for the Udylite home office for several years, has been transferred to the Udylite New York office where he will act as service engineer.

Pennsalt Additions

Pennsylvania Salt Manufacturing Co., 1000 Widener Bldg., Philadelphia 7, Pa., announces the following additions to its Research and Development staff: Miss Isabella A. Romans, formerly with Chloramine Corporation; Dr. George McCoy, formerly instructor of organic chemistry at the University of Pennsylvania; Mr. Ward W. Whitebread of General Chemical Company; Mr. Harry Green of Lion Oil Refiining Company; Mr. Savin Zavarella of Pratt Whitney Aircraft Corporation; Mr. Harold B. Staley of Cochrane Corporation; and Dr. Frank W. Panepinto of the Warner Company.

New staff members also include Miss Mary F. Hensler and Miss Helen Cunningham of the College of Chestnut Hill and Miss Mildred E. Raesler of Pennsylvania State College.

Philadelphia Quartz Service Emblem Plan

Recognizing the long years of continuous service of the men and women at the Philadelphia Quartz Co., Philadelphia, Pa., manufacturer of silicates of soda, Thomas W. Elkinton, president, recently announced a new service emblem plan.

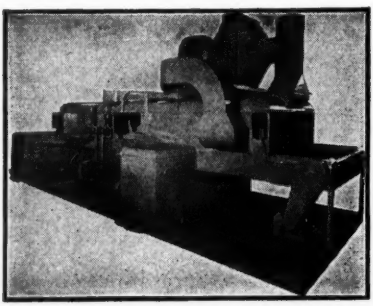
All employees associated with the company for 10 years or over will receive silver or gold pins or buttons designating specific periods of service. The emblem is patterned from the company initials P. Q., the Q forming the outside border. The emblems for 10-year employees are silver, and gold emblems are used for each succeeding five-year period. For 25, 30, 35, and 40 years, jewels are added.

Du Pont Appointments

According to a recent announcement, F. H. Weismuller has been appointed director of sales of the Pigments Department, E. I. du Pont de Nemours and Co., Wilmington 98, Del. Mr. Weismuller, who was production manager, succeeds John F. Daley, recently made general manager of the department.

R. A. Kaiser, assistant production manager, will succeed Mr. Weismuller, and C. E. Rossee, manager of the Baltimore, Md., pigments plant, will be transferred to Wilmington to become assistant production manager. C. E. Smith, in charge of silica gel operations at the Newark, N. J., plant, will succeed Mr. Rossee.

Mr. Weismuller has been with the Du Pont Company for 18 years. He was born in Brooklyn, N. Y., and was graduated from Cooper Institute in 1922 with a B.S. in chemical engineering.



HYDRO-FLOW
INDUSTRIAL WASHING MACHINES

Streamlined design. Recirculating hot or cold air blow off. Hidden motors, pumps and pipes are easily accessible. Piping and nozzles located to insure thorough cleansing of all surfaces. Rugged and efficient pressure pump. Corrosion resistant spray nozzles—from mist to open stream. Handling alkali to varsol as cleaner. Monorail, Belt, or Gravity type conveyors designed to carry any shape or size material. Variable speeds on conveyor drive synchronize production.

INTERNATIONAL CONVEYOR & WASHER CORP.
Write for circular.
652 E. FORT ST. DETROIT, MICH.

Manufacturers • Design Engineers • Finishing Dept. Heads

Have You Discovered

ROCKLOID

THE NEW SYNTHETIC FINISH

with Minimum Priority Requirements!

NO need to wait for the return of alkyds. Here's a *superior* baking enamel with a minimum of critical materials in its formula. Available now for war contracts and essential civilian uses. Rockloid, non-alkyd synthetic, possesses:

1. Extreme hardness with flexibility.
2. Top notch adhesion—no flaking.
3. Excellent resistance to salt spray, humidity, alkalies and solvents.
4. Fine appearance and color retention.

For full information send for Technical bulletin on ROCKLOID.

NOTE: ROCKLOID *may be had also in wrinkle finishes.*

Our laboratory facilities and specialized personnel are at your service.

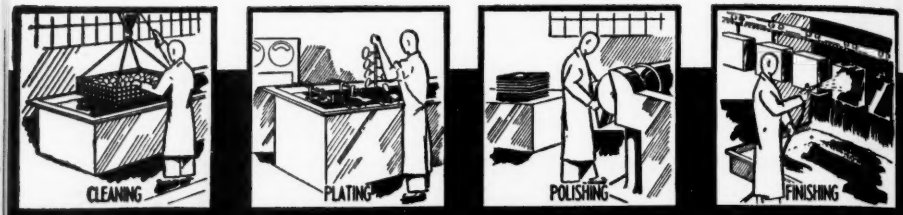
STANDARD VARNISH WORKS

2600 RICHMOND TERRACE
STATEN ISLAND, N. Y.

2600 FEDERAL STREET
CHICAGO, ILLINOIS

SINCE 1870

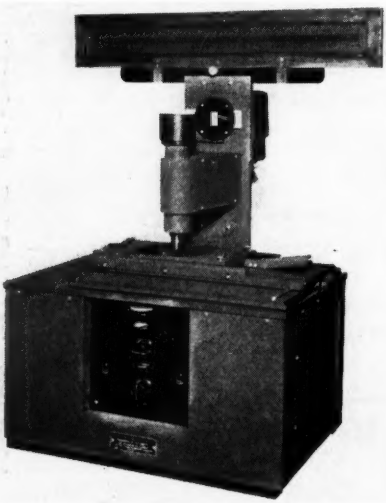
Engineers of Product Finishes



New Equipment and Materials

G-E Transmission Photometer

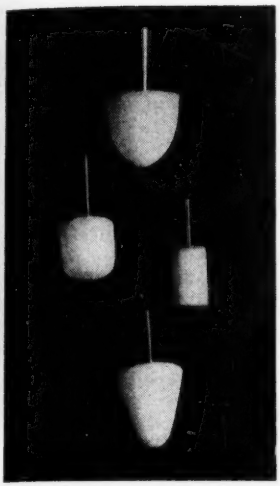
A transmission photometer for accurately measuring the amount of light transmitted through very small areas of spectographic plates has been announced by the Special Products Division of the General Electric Co., Schenectady, N. Y. The photometer is desirable for use wherever spectographic analysis is employed, such as in the metal fields, and also for microcolorimetric and microchemical analyses and for measuring light transmission through solutions.



G-E Transmission Photometer

Requiring a constant power supply of 6 volts, a. c. or d. c., with an approximate caapacity of 30 amperes, the G-E Transmission Photometer consists essentially of a light source, an optical system, a galvanometer, a light-sensitive cell, and a mechanical stage for accommodating the plate. The stage, which has a three-point, ball-bearing suspension, is movable in three directions, thus providing smooth, precise control of the position of the plate. Control knobs conveniently mounted on the front of the instrument facilitate focal adjustment and control of the several diaphragms and filters in the optical system which govern the intensity of the light and heat reaching the light-sensitive cell and the plate. Mounted in an attractive, sturdily constructed case, the instrument is especially easy to operate, since all adjustments can be made and seen from one position.

When measuring the light transmitted through a plate, the latter is mounted on the mechanical stage and light from a 6-volt, 18-ampere projection lamp in the optical system is collected by a condenser lens and focused on a wide-aperture lens, thus producing an image of the condenser lens on the plate. Magnified by an objective lens, this image is then cast upon a rectangular-shaped diaphragm located in front of the light-sensitive cell. The current output of the cell, which is the degree of light transmitted through the field of the plate, is shown on the galvanometer scale.



Just What You Need to Speed Production

MANDREL-MOUNTED FELT BOBS

PARAMOUNT BRAND Felt Bobs are now available in a wide range of styles and sizes mounted on ⅛ and ¼ inch diameter mandrels.

These mandrel-mounted bobs help speed production when operations are carried on by means of portable air or electric tools, flexible shaft equipment, lathes, drill presses, etc. No time is lost in fitting a new bob or an old mandrel. Simply slip a new mandrel-mounted bob into place. Another advantage: these mandrel-mounted bobs are "true."

Write for literature giving full information concerning these PARAMOUNT BRAND Mandrel-Mounted Felt Bobs.

BACON FELT COMPANY

"America's Oldest Felt Manufacturers"

Winchester, Mass. **Established 1824**

Felt Does It Better

2-BF-2

3-M Thiokol-Cork Surfacing Material

The Minnesota Mining and Manufacturing Co., 900 Fauquier Ave., St. Paul 6, Minn., has developed a surfacing material which is especially designed for application to airplane walkways. Made of Thiokol synthetic rubber and ground cork, the material can be applied at room temperature with an open nozzle paint spray gun, providing a nonskid coating which is said to be less than one fifth the weight of rubber matting; adhere to metal, plywood, and

Illustration showing 3-M Thiokol-Cork Surfacing Material being sprayed on aircraft panel

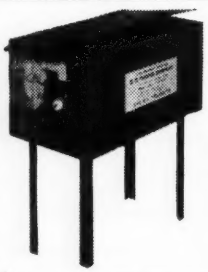
painted surfaces; remain flexible at temperatures ranging from minus 20 deg. F. to plus 160 deg. F.; and resistant to fire, gasoline, aromatic fuel, salt water, oils, hydraulic fluid, and oxidation. The material can also be applied with a knife or brush. Patches so constructed are said to blend well with the original coating.

According to the manufacturer, one of the most important properties of the material is its high coefficient of both static and sliding friction even when covered with water or a film of S. A. E. 1120 engine oil. Only one spray application is said to be necessary in order to build up a Thiokol-cork coating of sufficient thickness. The material is claimed to dry so rapidly that panels are ready for actual use within 12 to 14 hours after being coated.

For Present Day and Post War Problems, Investigate

To cut down your cost, increase production and improve your product, investigate the LUPOMATIC patented process for producing metal parts to a high lustre.

LUPOMATIC TUMBLING MACHINE CO., INC.
4510 BULLARD AVE. BRONX, N. Y.



HEAT WAX (AXS 1015)
For Export Packaging
CLEAN METALS *Faster! Cheaper! Safer!*

Cooper specially engineered electric or gas heated thermostat controlled tanks pay for themselves in a hurry. A multitude of uses. 5, 15, 30, 60 gallon sizes and larger. Quick delivery. Write for circular.

Also Chemicals, Rust Preventatives, Silica Gel, Etc.

D. C. COOPER COMPANY, 20 East 18th Street, Chicago 16, Illinois

A LESSON IN PLATING ARITHMETIC

720 Here's a new and better rack insulation for use in the strongly alkaline solutions used in plating ZINC, CADMIUM, NICKEL, TIN, HARD CHROME and duPont high speed COPPER. Excellent in acid solutions, too. Has greater resistance to hot cleaners and vastly superior adhesive qualities. Easily applied; quick air drying; permanently flexible; no carry-over; more economical because longer-lived and fewer coats required.

160 A dependable, easy-to-apply, long life Anodizing Rack insulation. Works equally well in either chromic or sulfuric process. No. 160 has long been successfully used by many platers for rack insulation in TIN, ZINC, COPPER, SILVER, NICKEL, CADMIUM and CHROME plating. Provides dependable economical, long life, easy-to-apply insulation.

608 A STOP-OFF that withstands strong alkali and holds on a trimmed edge to prevent creep of the deposited metal. Gives outstanding results in alkaline COPPER, ZINC, TIN, CADMIUM, SILVER and HARD CHROME. Quick air drying; brushes easily and lays over irregular surfaces without bridging. Decidedly economical to use.

These 3 numbers add up to the correct answer to virtually every rack insulation problem. Samples and further information await your request.

NELSON J. QUINN COMPANY, TOLEDO 7, OHIO

BUNATOL

Maas & Waldstein "Hammertone" Finishes

The manufacture of "Hammertone" finishes has been resumed by Maas & Waldstein Co., 438 Riverside Ave., Newark 4, N. J. These finishes simulate hammered silver, copper, bronze, and other ornamental metals and are designed for application on most metals or bakelite type (phenol formaldehyde) molded plastics.

Recent refinements in manufacture are said to have improved the working qualities of the finishes and simplified their application. A base coat of the color desired is sprayed onto the work and then quickly followed by a spatter coat of Hammertone liquid to produce the hammered pattern in the base coat. When a conveyor oven is to be used, parts may be placed on the conveyor chain immediately after spraying and baked at medium heat. When the regular convection oven is used, the product is allowed to set for 15 to 20 minutes before baking. Either method, it is claimed, produces a lustrous metallic finish that is very tough and durable.

With a special spatter gun perfected by Maas & Waldstein, the size of the pattern is regulated by the air pressure of the gun so that even an inexperienced operator can, it is stated, spray any desired pattern and maintain it. According to the manufacturer, the adaptability of Hammertone to continuous production methods make it a practical finish for postwar metal novelties, heating units, air conditioning equipment, metal cabinets and furniture, molded radio cases, and many other products.

Cyclodiene FN Solvent Cleaner

An all purpose solvent metal degreaser and cleaner designated as Cyclodiene FN has been announced by the Technical Processes Division of the Colonial Alloys Co., Philadelphia 29, Pa. In addition to its high speed of solvency, the cleaner contains a fingerprint and body acid neutralizer.

Cyclodiene FN is designed for use at room temperature. Work to be cleaned is either immersed into or sprayed with the material, no special equipment being required.

"ROBINSON'S ASSAYED"

Gold Plating Solutions

Are Nationally Endorsed

MADE BY A. Robinson & Son
131 CANAL ST. NEW YORK

Another WAR JOB for INFRA-RED

Photo: courtesy "Electrified Industry"

American artillery in the battle of Aachen fired shells so fast that ammunition actually ran short, and American factories faced the call for more production. Industry is meeting that call! Here's how a bank of reflector-type Infra-Red Heat Lamps speeds up a drying operation in the production of shell cases in the Schlage Lock Co. in San Francisco.

BIRDSEYE INFRA-RED HEAT LAMPS

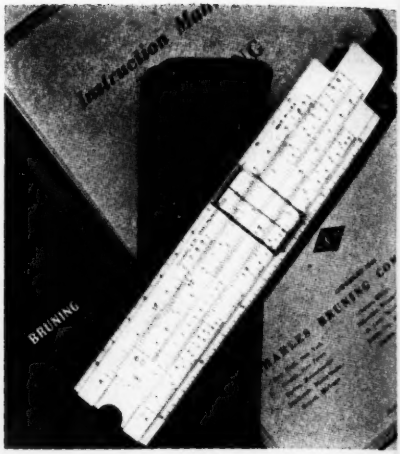
are standard for most infra-red tunnels, ovens, and other production line installations. There is no mystery or hocus-pocus about the really dramatic results possible with Infra-Red. However, Infra-Red Heating is a science, and, for maximum efficiency, Birdseye Lamps should be used with scientifically engineered equipment. We will gladly furnish names of manufacturers of such equipment.

WABASH APPLIANCE COMPANY

345 CARROLL STREET, BROOKLYN 31, N. Y.

Bruning 2401 Pocket Slide Rule

Designated as the Bruning 2401, a high-quality 5-inch pocket slide rule for engineers is now being offered by the Charles Bruning Co., Inc., New York, N. Y. A carefully made, smooth working instrument designed for fast, easy operation, the slide rule features precision graduations which are molded in the rule to retain their visibility over a long period. Graduations and numerals on the CI scale are in red to facilitate reading.



Bruning 2401 Pocket Slide Rule

Three screws in the back of the rule provide a simple adjustment for tension on the slide. The indicator is of glass and is easily replaceable in the event of breakage. The indicator is enclosed in a frame of stainless steel which holds it firmly in place and eliminates "wobble." A, B, CI, C, D, K, S, L, and T scales are provided on the rule in order to adapt it to the widest possible range of service. The beveled edges of the rule are in graduated scales of both inches and centimeters.

The Bruning 2401 Pocket Slide Rule is supplied complete with a natural leather case and instruction booklet.

A fast, practical, scientific

PRE-TEST FOR WEAR RESISTANCE

The TABER ABRASER
gives "Advance Data"
on the Wearability of
PAINTS·LACQUER·PLATING
LEATHER·RUBBER·PAPER, Etc.

In checking the wearability of your own products as compared with competitors', as well as in research on new developments—the Taber Abraser gives you an accurate rating of resistance to surface abrasion quickly, simply. Eliminates slow, costly performance tests. Used by hundreds of manufacturers and research laboratories. . . . Full particulars on the Taber wear testing procedure will be sent on request. No obligation.

TABER INSTRUMENT CORP.
111PF Goundry St., North Tonawanda, N. Y.

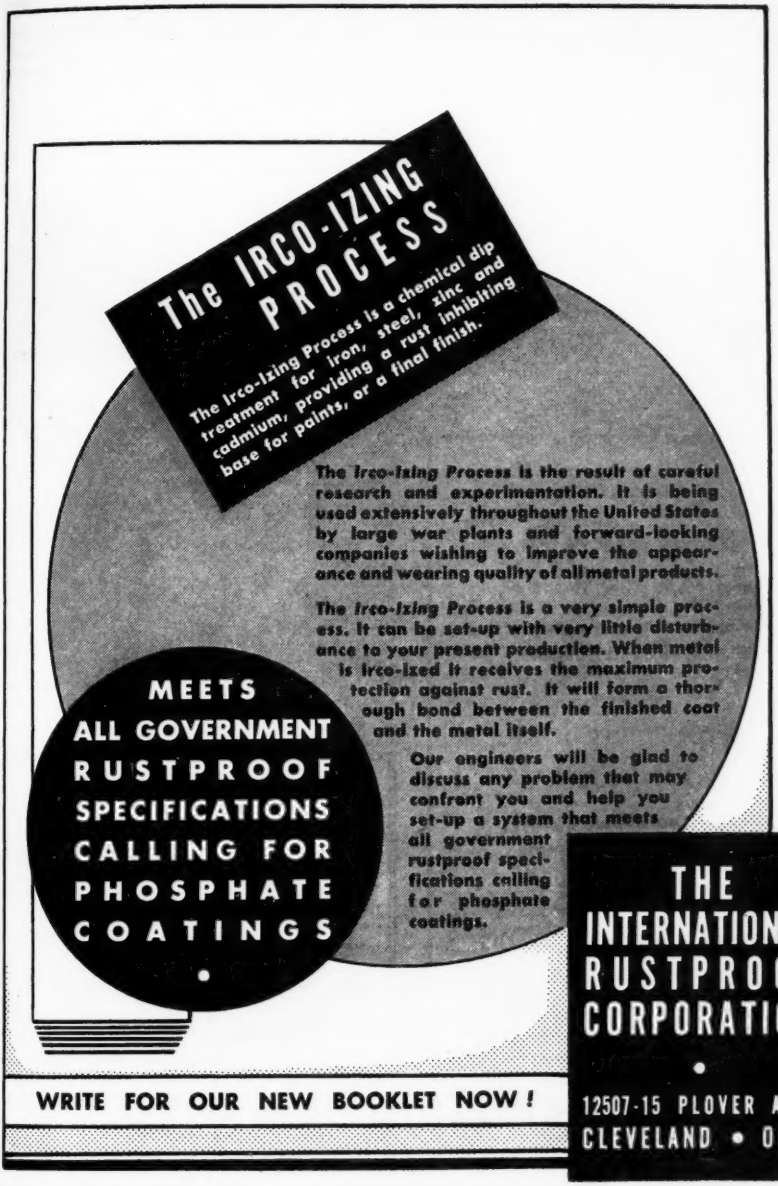
The Taber Test *Proves* What Wears Best!

If you've a tough cleaning problem, our Cooperative Service can aid you. Just write us. No obligation for interviews.

Perfect Finish on Metal!

IMPOSSIBLE! yes, unless the finish goes on a chemically clean surface. In hundreds of metal fabricating plants, PERMAG Cleaning Compounds are used—and many of the finishers say the PERMAG way is the one dependable way, and always gives most satisfaction. PERMAG Compounds are fast in action, efficient, economical.

Magnuson Products Corp.
50 Court St. Brooklyn, N. Y.
Nationally Represented in U.S.A.
In Canada: Canadian PERMAG Products Ltd., Montreal—Toronto


The IRCO-IZING PROCESS
The Irco-Izing Process is a chemical dip treatment for iron, steel, zinc and cadmium, providing a rust inhibiting base for paints, or a final finish.
The Irco-Izing Process is the result of careful research and experimentation. It is being used extensively throughout the United States by large war plants and forward-looking companies wishing to improve the appearance and wearing quality of all metal products.
The Irco-Izing Process is a very simple process. It can be set-up with very little disturbance to your present production. When metal is irco-ized it receives the maximum protection against rust. It will form a thorough bond between the finished coat and the metal itself.
Our engineers will be glad to discuss any problem that may confront you and help you set-up a system that meets all government rustproof specifications calling for phosphate coatings.
MEETS ALL GOVERNMENT RUSTPROOF SPECIFICATIONS CALLING FOR PHOSPHATE COATINGS
THE INTERNATIONAL RUSTPROOF CORPORATION
12507-15 PLOVER AVE.
CLEVELAND • OHIO
WRITE FOR OUR NEW BOOKLET NOW!

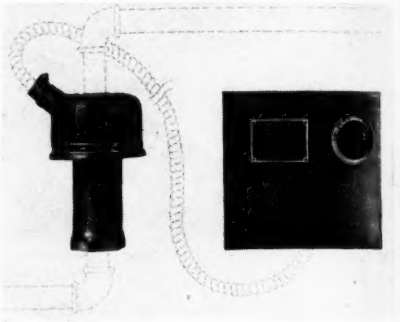
Triad PR Protective Coating

Triad PR, a protective coating for the sidewalls of both wet and dry spray booths, is announced by the Detrex Corp., 13017 Hillview Ave., Detroit 27, Mich. With this coating between the walls and the layer of overspray that normally builds up, quick and easy cleanup is assured. The booth so protected can be stripped clean simply by spraying with water or steam; the Triad PR and accumulated paint flush off together. In dry booths which have no drainage facilities, the protective coating greatly facilitates scraping off the paint.

Triad PR can be applied by either brush or spray gun. According to the manufacturer, it affords excellent coverage and dries to a hard, white, dustless coating which improves visibility in the booth.

Hancock Level Float Control

Designed to accurately control liquid level to within a fraction of an inch, the Hancock Level Float Control shown



Hancock Level Float Control

in the accompanying illustration is announced by the Hancock Valve Division of Manning, Maxwell & Moore, Inc., Bridgeport 2, Conn. The control is described as being free from electrical switching or contacts within or without the float chamber. In addition it includes no levers, linkages, bellows, stuffing boxes, cooling fins, mercury switches, or wearing parts. By the simple adjusting of a screw, the level of the liquid can be raised or lowered.

ANNOUNCING

McKEON'S "ZINC-BRITE"

Removes heavy metal impurities from your zinc solution.

SAFE.

SIMPLE DIRECTIONS.

FOOL PROOF.

Order trial gallon ($3.00) on 30 days' approval.

(SERVICE FREE)

SULPHUR PRODUCTS CO.

GREENSBURG, PA.

ALLWOOD

"Vienna Brand" Line

Made from Limestone that is identical in chemical analysis and geological structure with European Imported Lime. Tests show a "lime cake" made from Allwood "Vienna Brand" Lime equals the finish made from imported lime.

WRITE FOR FULL PARTICULARS

ALLWOOD LIME COMPANY

Manitowoc • Wisconsin

For a real good polishing job use

KEYSTONE EMERY

TURKISH — NAXOS — AMERICAN

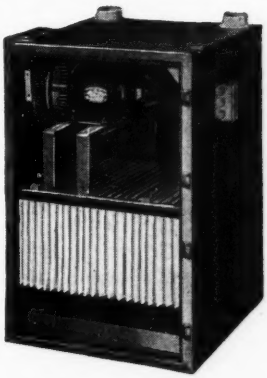
KEYSTONE EMERY MILLS *Write for Sample* **4316 Paul St., Phila., Pa.**

Don't Gamble—

with the DUST MENACE—

GET TORIT PORTABLE DUST COLLECTORS

TORIT Dust Collectors are made in sizes ranging from ⅓ horse power to 3 horsepower. Steel cabinets contain the motor, fan, fan-housing and a set of chemically treated, spark-resistant filter bags, which provide a highly efficient method of air filtering in small compact space.



Dust laden air is a health menace which also reduces employes' efficiency. TORIT Dust Collectors remove this menace and protect valuable equipment from abrasive dust and grindings.

Write for the latest TORIT Dust Collector catalog giving full information and description of different size units.

▶*Torit-ize for Safety*◀

TORIT MANUFACTURING CO.
314 Walnut St. St. Paul 2, Minn.

TORIT Dust Collectors
SELF-CONTAINED UNITS

Enthone "Alumon" Process

The Enthone Co., 524 Elm St., New Haven 2, Conn., announces the development of a simple process for preparing aluminum for electroplating, to be known as the "Alumon." The process allows for the electroplating of all types of aluminum. Both rack and bulk work can, it is claimed, be readily processed.

The procedure consists in cleaning the work to be plated in the usual manner, followed by a short dip in the Alumon solution, which produces an active alloy base that can be subsequently copper or silver plated. After the work has been given a short copper plate, it can then be electroplated with other metals, including nickel, chromium, gold, and so on.

At present, the Alumon Process is being widely used in connection with the plating of aluminum radar equipment and other apparatus. It is also said to be ideal for use in the postwar plating of such articles as costume jewelry, amulets, pencil points, and so on. Work plated by means of the Alumon Process can, it is claimed, be subjected to severe distortion without flaking, and the plate can be readily soldered, thus allowing for easy connection to work made of aluminum.

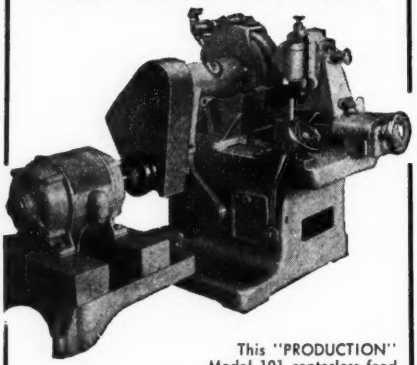
Phillips Metal Parts Washer

The Phillips Manufacturing Co., 3488 W. Touhy Ave., Chicago 45, Ill., announces the three-stage metal parts washer illustrated herewith. Designed for use with an emulsifying cleaner or as an alkali washer, the unit comprises a heated solvent tank and two heated water rinse tanks. The heated solvent tank offers a thermostatically controlled range of from 135 to 250 deg. F. and includes a drain board which conducts the "drag out" solvent back into its tank.

After immersing in the cleaning agent and draining, the parts are immersed in the first and then the second rinse tank, emerging, finally, completely oil and dirt free. Each water rinse tank has a controlled flow which maintains the temperature of the rinse at approximately 180 deg. F. A unique arrangement provides for the removal of most of the dirt and oil in the first rinse so that the final rinse produces oil-free work.

The solvent tank is heated by strip

MORE AND BETTER FINISHING



This "PRODUCTION" Model 101 centerless feed polishing machine produces better finishing at a lower cost and is especially designed for high-speed cylindrical work. It feeds automatically without centering, chucking or holding. All parts are guarded and readily accessible for changing the belt. The construction is rigid and durable throughout. *Write for illustrated folder.*

PRODUCTION MACHINE CO.

Greenfield Mass.

SOL-KLEAN

for

Better Paint Adhesion

INDUSTRIAL CHEMICAL PRODUCTS CO.

DETROIT 7

Milwaukee Fort Wayne

BETTER PLATING, LESS COST!

"MGC" ELECTROPLATING EQUIPMENT

Write for Interesting Details TODAY!

MOTOR GENERATOR CORP., HOBART SQ. PF-15 TROY, OHIO

TAPE OR COATINGS?

MICHIGAN CHROME SUPPLIES THE *Exact* MATERIAL TO MEET YOUR NEEDS

★ For Insulation of Plating Racks

★ For Masking Parts Prior to Selective Plating

WITH the addition of Miccrotape to the line of "Miccro Products", we can now meet any requirement for protective materials used for insulating plating racks or masking parts.

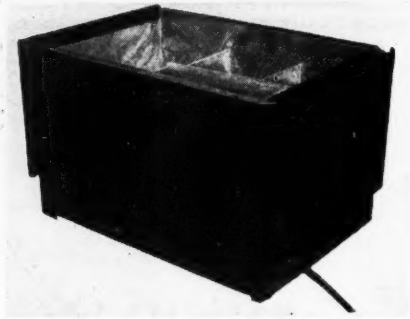
Miccrotape is the first tape of its kind to be produced by an extruding process to provide extremely easy application, smooth over-lapping and a snug fit around every surface. This, and many other features, make it extremely effective in use with all types of plating solutions.

Under conditions where lacquer coatings are most desirable, this company offers five types of Micro-Supreme Stop-Off Lacquers and Miccrolite or Miccroflex. These are the materials which, for years, have had greater acceptance throughout the plating industry than any similar products.

The line of "Miccro Products" is comprised of materials developed and manufactured by experienced platers for the primary purpose of producing in their own plant better plating at lower cost. They can be depended upon to help you achieve the same results.

MICHIGAN CHROME & CHEMICAL CO.
6342 EAST JEFFERSON • DETROIT 7, MICHIGAN

heaters and the water rinse tanks by immersion heaters. The heated walls of the washer are insulated and all



Phillips Metal Parts Washer

working parts of the unit are easily accessible through a door. Two safety covers hang at the sides of the washer when not in use and protect the operator from any contact with the tank itself.

Du Pont High-Speed Electrotinning Process

Designed to conserve scarce tin, a high-speed electrotining process for copper wire has been announced by E. I. du Pont de Nemours & Co., Wilmington 98, Delaware. Electrical wire ranging in sizes from those approximately as fine as a human hair up to heavy gauges can be coated by means of the process, which comprises the use of a wire-plating machine 30 ft. long employing Du Pont Halogen Tin Plating solution. Wire only 0.005-inch thick can, it is claimed, be given a new thin coat at the rate of 800 ft. per minute without breakage. Heavier strands may be plated at even higher speeds, it is stated.

"Penetray" Drying Lamps

A line of infra-red lamps for use in baking, drying, and dehydrating operations, to be known as "Penetray," is now being manufactured by the Verd-A-Ray Corp., 615 Front St., Toledo 5, Ohio. Each lamp is provided with an exclusive ceramic coating which is said to

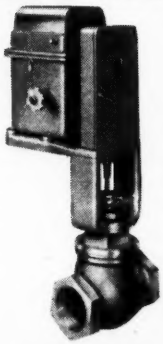
BARBER-COLMAN

MICRO SYSTEM *for* FINISHING CONTROL

REMOTE BULB MICROTHERM

Plating tanks, anodizing baths, and many other finishing operations where uniform temperature must be maintained, can be improved by using the Barber-Colman automatic electrically-operated "MICRO System" of temperature control equipment. Features include simple construction, no relays, and maximum power at all points of the valve stroke: "Hunting" is eliminated and the valve is positioned quickly with "micrometer accuracy."

Write for Bulletin
"CONTROLS FOR INDUSTRY"



PROPORTIONING VALVE

BARBER-COLMAN COMPANY
1248 ROCK ST. • ROCKFORD, ILL.

ANNOUNCING . . .
a new Despatch Field Office in Chicago ★

to Help Solve Your Finish Baking Problems

Further expanding its nation-wide engineering service, Despatch has opened a new Field Engineers Office in Chicago.

Staffed by competent engineers of exceptional experience in all phases of heat application, this office will collaborate with the 74 Despatch *Resident* Engineers to provide the most complete engineering service available in this field.

These engineers can give you quick, sure help in solving many finishing problems, from initial planning of layout to final installation of all necessary equipment. *CALL your nearest Despatch Resident Engineer!*

A DESPATCH ENGINEER CAN HELP YOU . . .

SAVE TIME by providing the right answers quickly, based on years of experience. Avoids trial and error.

●

SAVE EXPENSE by recommending baking equipment best suited to your present and future needs.

●

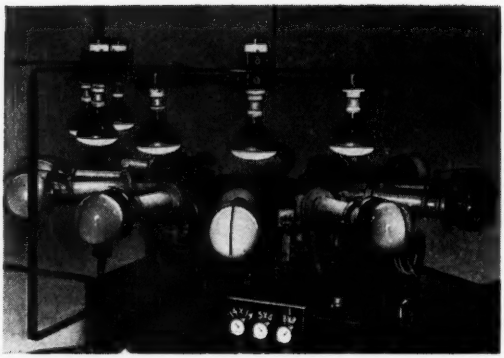
SAVE MANPOWER by suggesting better methods for fast, easy handling of material.

●

SAVE FLOORSPACE by planning ovens to fit your layout most effectively. Types and sizes for all needs.

Call Despatch for all INDUSTRIAL FURNACES AND OVENS.

DESPATCH OVEN COMPANY MINNEAPOLIS 14 MINNESOTA, U.S.A.



"Penetray" Drying Lamp Installation

improve wave length, thus producing more intensive color, thorough curing, and excellent polymerization on metals. In addition, insect attraction is reduced to a minimum and improved uniformity of energy distribution is said to result. The design of the lamps provides for an unusually low lamp base temperature and a reduction of glare.

Penetray Drying Lamps are available in 250 to 375 watts and in lengths of 6¾, 7, 8, and 10 inches.

Hydrosulphosol

A chemical formula for painful burns, to be known as Hydrosulphosol, is now being marketed by the Davis Emergency Equipment Co., Newark, N. J. Available in ointment and solution form, the formula, according to the manufacturer, not only prevents penetration by oxygen into scarred tissues but, by itself suffusing the damaged tissues, breaks down oxidized cells and helps stimulate the natural restoration of injured tissues.

Hydrosulphosol, it is claimed, has been successfully used on all types and degrees of burns, providing for quick relief from pain, infection control, acceleration of healing, non-toxic safety, and the stimulation of new tissues or the repair of burned ones to check the danger of disability.

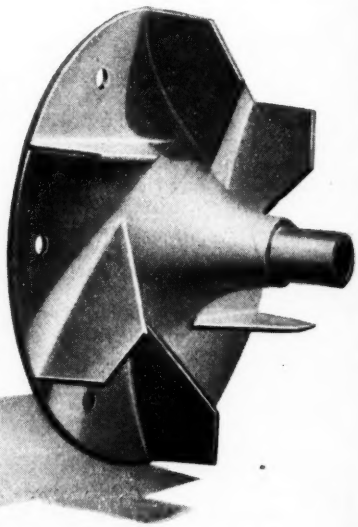
LOW COST METAL CLEANING by FIDELITY

Safe · Fast · Economical

Heavy deposits of grease and oil vanish quickly when Fidelity cleaners are used. Guaranteed not to attack the metal, these products "bite in" to remove every trace of grime. They leave a perfectly clean surface ready to receive plating and other types of finishing.

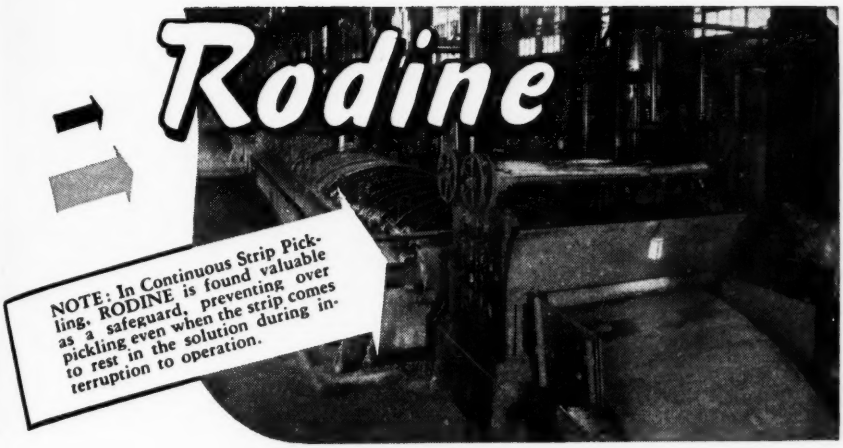
Fidelity products are recommended by expert service engineers who will survey your cleaning requirements entirely free of charge.

Start now to step up efficiency and lower costs by writing to:



FIDELITY CHEMICAL PRODUCTS CORP. 430 RIVERSIDE AVE. NEWARK 4, N. J.

"Serving industry with cleaning and stripping compounds"


Rodine
NOTE: In Continuous Strip Pickling, RODINE is found valuable as a safeguard, preventing over pickling even when the strip comes to rest in the solution during interruption to operation.

Makes Possible, WITH SAFETY, *Faster Production and Increased Actual Tonnage Yield of Pickled Steel*

RODINE permits the use of stronger acid concentration and higher temperatures without danger of over pickling or etching, thereby speeding the process and increasing output.

It is possible with **RODINE** to safely obtain increased tonnage with present equipment—a valuable consideration now when needful new equipment is difficult or impossible to secure.

RODINE-controlled pickling produces a smooth, bright, clean surface. There is no pickling condition which is not improved with Rodine, except where deep etching is desired. Rodine confines the action of the acid in the pickle bath to removal of scale, thus minimizing the acid attack on clean metal and overcoming deep pitting and embrittlement.

There are types of **RODINE** suited to the varying pickling problems. The experience of ACP Technicians is at your service to recommend the Rodine and method best suited to meet your needs if you will write in detail to Dept. A-1.

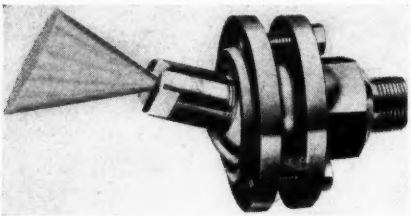
MANUFACTURERS OF INHIBITORS AND METAL WORKING CHEMICALS

AMERICAN CHEMICAL PAINT CO.
AMBLER ACP PENNA.

Note—West Coast Plants may address inquiries and orders for prompt delivery to Leon Finch, Ltd., 728 East 59th St., Los Angeles, California

Spraying Systems Adjustable Joint

Due to a new ball and socket design, the Spraying Systems Adjustable Joint illustrated herewith, product of the Spraying Systems Co., 4015-21 W. Lake St., Chicago 24, Ill., affords a full 50-deg. nozzle adjustment range in any plane at right angle to the face of the joint. The thick socket plates provide for an unusually strong friction grip which is said to be more than sufficient to hold the nozzle in fixed position no matter how extreme the spraying operation. Three machine screws are used for quickly adjusting the joint as required.



Spraying Systems Adjustable Joint

The accompanying illustration shows the Spraying Systems Adjustable Joint with a "Veejet" flat spray nozzle mounted in the socket. The joint is made in brass or steel as standard, but may be obtained in a variety of special steel alloys as required.

Particularly useful in performing washing, rinsing, and paint flow-coating operations, the Spraying Systems Adjustable Joint is available in various sizes with standard pipe threads, such as ⅛, ¼, ⅜, ½, ¾, and 1 inch.

Manhattan Rubber Products for Industry. A 56-page condensed catalog of mechanical rubber products has been prepared by the Manhattan Rubber Manufacturing Division of Raybestos-Manhattan, Inc., Passaic, N. J. The catalog includes illustrated, descriptive and tabular information on belts, hose, packing, molded goods, friction material, rubber covering, abrasive wheels, and so on. Copy free to executives upon request.

STRIPPING COPPER?

(Pressed for Space?)

Make the most of your present equipment.

Adapt your surplus equipment for stripping.

McKEON'S

Liquid Sulphur

staff is versed in such rearrangement problems.

Take advantage of this FREE help. No obligation!

GLAD to discuss YOUR problem. Wire collect.

SULPHUR PRODUCTS CO.

GREENSBURG, PA.

(Special brochure "STRIPPING COPPER" on request)

JUST FOR THE RECORD

CEL-U-LAK

A complete line of cellulose derivative lacquers and enamels.

FORM-A-ROC

A unique line of quick-baking, tough adhesive synthetic enamels.

REMEMBER THESE NAMES.

After V-day they will mean something to you.

The Varnish Products Co.

5208 Harvard Ave.

Cleveland, Ohio

GET WORK OUT FASTER

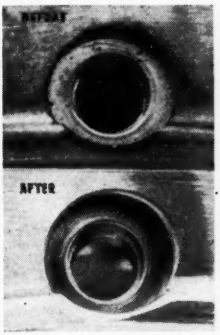
with

Steel-Grip Gloves

With no time to be lost, keep war production moving, speed deliveries, save time with Steel-Grip Reinforced Gloves. They handle rough, heavy, jagged materials at breathless pace. Chrome tanned cowhide. Steel ribbon reinforced palm and fingers. Steel thread sewed. Protect against cuts, bruises. Or what's your need? Over 4300 proved Steel-Grip Safeguards may give immediate answer. Used by big industrials since 1910. Write for catalog or state your need today.

INDUSTRIAL GLOVES CO.
711 Garfield Blvd. Danville, Illinois
(In Canada: Safety Supply Co., Toronto)

BRUSH YOUR BURRS AWAY



Roberts Burring Compound provides better and faster production. NOTE the absence of any excess metal, the smooth finish and rounded corners after brushing shown in lower illustration at right.

Write for samples and suggestions.

ROBERTS ROUGE CO.
STRATFORD • CONN.

Ridsmel
STOPS PAINT SMELL INSTANTLY!

A few, economical drops of Ridsmel work with magical effectiveness. All disagreeable odors are killed—at once! No irritating smells during or after application. Ridsmel is safe in all paints, varnishes, enamels. Used from coast to coast in industrial plants, hotels, hospitals, food plants, shipyards.

Send for Trial Bottle $5 Prepaid (Good for 200 Gallons of Paint)

Holley Chemical Co.
126 E. 25th St.
New York 10, N. Y.

COMMENDED PARENTS' MAGAZINE CONSUMER SERVICE

Houghton Cosmoline Fingerprint Neutralizer for preventing corrosion arising from handling steel parts is the subject of a four-page folder issued by E. F. Houghton & Co., 303 W. Lehigh Ave., Philadelphia 33, Pa. Copy free upon request.

"The Chain Hoist of Tomorrow, Today, and Yesterday" is the title of a 12-page bulletin issued by Chester Manufacturing Co., Lisbon, Ohio, illustrating and describing the company's entire line of chain hoists and trolleys. The care and use of such equipment are also covered. Copy free upon request.

Hercules Ethyl Cellulose. Two technical booklets on ethyl cellulose, base of many plastics, flexible lacquers, quick-drying varnishes, inks, adhesives, fabric coatings, and electrical insulation, have been published by the Cellulose Products Department of Hercules Powder Co., Inc., Wilmington, Delaware.

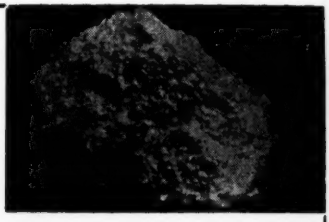
The 48-page booklet on "The Properties and Uses of Ethyl Cellulose" is divided into three parts. The first part includes data on types and grades and general properties of ethyl cellulose, as well as a blending chart. The second part deals with formulation and the third part with specific applications of ethyl cellulose in various industries. Twenty-two tables and 11 graphs illustrate and explain the effect of ethyl cellulose in various formulations.

The second booklet, which is entitled "Ethyl Cellulose Formulations with Resins in Plasticizers," was prepared for those interested in making practical use of ethyl cellulose. To obtain the data in this booklet, a variety of 42 resins representing various commercial types were examined. The booklet is intended to eliminate unnecessary research on the part of experienced formulators by providing a basis for formulation of ethyl cellulose lacquers, adhesives, plastics, and hot-melt coatings. Seven tables indicating the test results obtained on ethyl cellulose lacquers and nitrocellulose comparison formulas are included in the section on application data.

Copy of either or both booklets is available free to executives upon request.

Can your product utilize

FLOCK?



Flock—finely cut fibres—is used to transform the surface of many products, for an amazing variety of decorative and functional purposes. Let us assist you in investigating possible applications.

FUNCTIONAL

Used in airplane, auto and numerous other industries for —

SOUND DEADENING • TEMPERATURE INSULATION • INTEGRAL GASKETS • SHOCK-ABSORBING SURFACE • NON-MAR SURFACE PROTECTION.

DECORATIVE

Applied in various lengths and colors to wood, paper, cloth, metal, etc., the following effects are produced —

SUEDE LEATHER • FURNITURE UPHOLSTERY FABRICS • AIRPLANE AND AUTO UPHOLSTERY FABRICS • VELVET • VELOUR • MOHAIR.

REQUEST SAMPLES AND PRICES

RAYON PROCESSING CO. OF R. I., INC. • **65 TREMONT STREET CENTRAL FALLS, R. I.**

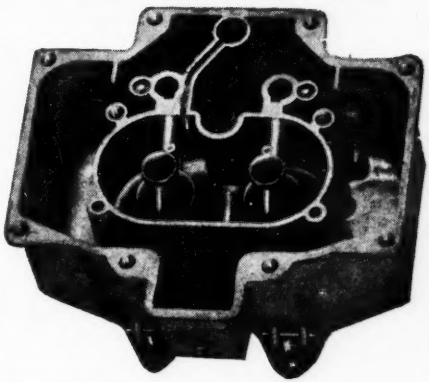
HOWARD
HEADQUARTERS for Cleaning and Finishing

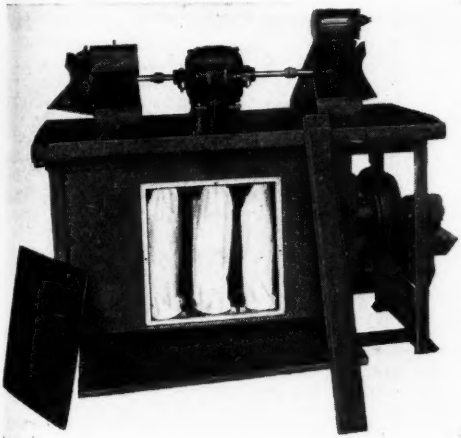
Howard Mass-Production De-Burring Machines now clean and finish thousands of parts mechanically. Completely eliminate time-consuming, costly hand methods. These machines maintain precise measurements, greater uniformity in recessed areas and on compound surfaces. Equally efficient on die-casting, stampings, forgings, screw machine parts, etc.

Send sample parts for processing, or write for detailed information.

HOWARD ENGINEERING and Mfg. Co.
2237 BUCK ST., CINCINNATI 14, OHIO

SOLVES MASS-PRODUCTION DE-BURRING





Munning & Munning, Inc.

Engineers and Manufacturers
Electro Plating Equipment and Supplies

202-208 Emmett St. **Newark, N. J.**
New York **Philadelphia** **Woonsocket, R. I.**

New Table Model Double Spindle Lathe

for polishing, buffing, grinding, lapping precious metals

Compact, sturdily built bench-type design. Self contained separator and exhaust system; 62 in. long, 26 in. wide.

DUST HOODS — Movable side door permits polishing larger objects. Adjustable cover allowing use of various sized wheels. Light sockets in hoods for illumination of work for operator.

MOTOR — Double spindle. Variable speed, maximum 3500 R.P.M.

DUST CONTAINER—Cloth, tubular system in galvanized metal chambers underneath table.

BLOWER — High suction type, motor driven.

Send for further details and prices.

1896 1944

USA

Just a reminder that

USA Brand Felt Wheels still hold the record for being the best felt wheels manufactured. Try one on a test against any other felt wheel and note the savings.

We manufacture Bobs — all shapes. Send us your sketch for quotation.

Also manufacture Sheet Felts in all hardnesses — both Squares and Strips.

EASTERN FELT COMPANY

Manufacturers

80 CANAL ST., WINCHESTER, MASS.

"Bonderizing," a process for producing a rust-resisting base on metal parts for paint finishes, is the subject of a 44-page booklet prepared by the Parker Rust-Proof Co., 2177 E. Milwaukee Ave., Detroit 11, Mich. The booklet illustrates and describes in detail the features and advantages of the Bonderizing process, its application, as well as numerous parts and products which can be Bonderized. Copy of the booklet is available to executives addressing requests on their company letterheads.

Amercoat No. 23 Plastic Coating. Many practical suggestions for eliminating corrosion and contamination are provided in a four-page bulletin on Amercoat No. 23 Plastic Coating issued by the Amercoat Division, American Pipe and Construction Co., P. O. 3428, Terminal Annex, Los Angeles 54, Cal. The bulletin describes the many uses of this general purpose, cold-applied plastic coating in a wide range of industries. Properties and advantage of the coating are also covered in detail. Copy of bulletin free upon request.

YM Plastic Coater Bulletin. The Youngstown Miller Co., Sandusky, Ohio, announces a six-page bulletin which describes the operation and features of the YM Plastic Coater—a machine which is designed to properly melt ethyl cellulose compound and other plastic coatings used for protecting parts and tools being stored or shipped overseas. The same equipment is also used for melting low temperature plastics used for permanent coatings. Copy of Bulletin YM-800 free upon request.

Pennsalt Cleaner EC-10, an organic type cleaner which is said to be especially adapted for the quick removal of drawing compounds or cutting oils in a single operation, is the subject of a folder issued by the Special Chemicals Division, Pennsylvania Salt Manufacturing Co., 1000 Widener Bldg., Philadelphia 7, Pa. The folder explains the use of Pennsalt Cleaner EC-10 in both the dip and spray washing methods of cleaning, and contains pictures of interesting tests demonstrating the stability of the product in emulsion. Copy free upon request.

TIME TO RELAX?.. HELL, NO!

This is no time to start pulling up the old easy chair . . . not when we all know that only combined effort and all-out cooperation will speed the knock-out punch. Your iron and steel products are vital to the war effort . . . and they'll do a better job if you assure long-lasting protection by the PENNizing process of Quality Hot Dip Galvanizing . . . PENNizing, the lasting protection against corrosion.

HOT DIP GALVANIZING • GALVANIZED IRON AND STEEL PRODUCTS FURNISHED

PENN GALVANIZING CO.

the Nation's Largest

PICKLING AND PAINTING • PICKLED AND PAINTED IRON AND STEEL PRODUCTS FURNISHED

Gen. Offices: 2201 E. Tioga Street, Philadelphia, Pa.

PLANTS: No. 1, 2201 E. Tioga St. - No. 2, 2400 E. Tioga St. - No. 3, 3548 N. Sepviva St.

SPEKWITE

ECONOMICAL, DECORATIVE QUALITY PLATED FINISH

Tarnish Resisting — Faster Plating — Lustrous Finish

DRASTIC NEW REDUCTION IN PRICES afforded by considerable savings in manufacturing costs. SPEKWITE costs less than nickel plating for the same thickness.

ORIGINAL PATENTED TRI-METAL ALLOY PLATE OF COPPER, ZINC AND TIN. No royalties or license fees. Covered by U. S. Patent No. 2,079,842 issued May 11, 1937 ON WHITE ELECTROPLATE.

WRITE FOR LITERATURE — Data sheets describing SPEKWITE in detail—advantages, properties, characteristics and price—will be sent promptly on request. There is no obligation.

SPEKWITE plates quickly and directly on nearly all metals, and covers hard solder and most soft solders. Soldering and welding are easily accomplished on SPEKWITE plated work. Extremely high throwing power enables it to penetrate deep recesses. Used extensively on Government work. SPEKWITE has high salt spray resistance (about 1½ times nickel for same thickness), and is non-magnetic. Articles can be formed after plating without cracking or peeling. Plating can be controlled by plater at tank, or by laboratory. Ideal for plating in a steel tank, basket and barrel. Economical—only 1 lb. of SPEKWITE plates about 100,000 sq. in. minutes of work. Reflectivity is high —82% of silver.

SPEC

SPECIAL CHEMICALS CO.

38 IRVING PLACE, NEW YORK 3, N. Y.

Opportunity Section

SALESMAN WANTED

Salesman, experienced in the sale of industrial varnishes, enamels, synthetics and lacquers, wanted by a prominent manufacturer, to cover certain central states. A substantial amount of established business will be turned over to the successful applicant. This is an exceptional opportunity to make a permanent and profitable connection with one of the large and highly respected companies in the industry. Give complete details of past experience and present connections. All replies will be considered as confidential. Our own sales force is aware of this advertisement. Address Box 28, Products Finishing, 431 Main St., Cincinnati 2, Ohio.

PLATING & POLISHING EQUIPMENT WANTED

(New or Used)

Electroplating Generators
Electroplating Rectifiers
Plating Tank Rheostats
Plating Barrels
Ball Burnishing Barrels
Tumbling Barrels
Burnishing Balls
DC Ammeters and Voltmeters
Polishing and Buffing Lathes

"Idle Equipment Is Wasted Equipment"

Write us full particulars and our representative will call.

BAKER EQUIPMENT CORP.
143 Sidney St., Cambridge 39, Mass.

"Houghton Products for the Metal Industries," a four-page folder published by E. F. Houghton & Co., 303 W. Lehigh Ave., Philadelphia 33, Pa., briefly treats of rust preventives, metal cleaners, and other materials available from this firm for use in the surface treatment, cleaning, and so on, of metal parts. Copy free upon request.

"For Stripping Copper" is the title of a 12-page brochure issued by the Sulphur Products Co., Inc., Greensburg Pa., describing physical, chemical, and physiological properties, application, features, advantages, and so on, of McKeon's "Liquid Sulphur"—a saturated solution of a complex inorganic polysulphide. Prices of the material are also listed in the brochure, copy of which is available free upon request.

Birdseye Infra-Red Lamps. To acquaint interested individuals with the many advantages of the infra-red process, the Wabash Appliance Corp., 345 Carroll St., Brooklyn 30, N. Y., manufacturer of "Birdseye" Infra-Red Lamps for radiant heat, has prepared a special brochure on the subject. The brochure provides answers to various questions concerning infra-red and explains by means of photographs and examples the manner in which this process can be applied to industry and commerce. Copy free upon request.

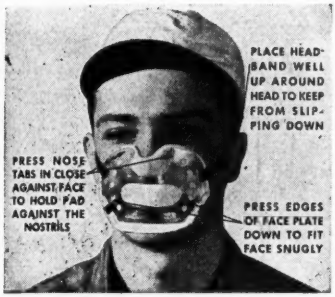
"The Turner System of Materials Handling" is the title of a 20-page book published by the Factory Service Co., 4615 N. 21st St., Milwauke 9, Wis. The system is based upon vertical extension of the perfect square and provides the benefits of mobility, orderliness, and co-ordination in the manufacture of large and small products or parts of every description.

Practically every page of the book contains illustrations and ideas for organizing plant interiors for modern mass production and the systematic movement of products or parts through the plant. Interchangeable and interlocking units of almost unlimited flexibility are described. Copy of book is available free to executives addressing requests on their company letterheads.

Don't Breathe DUST

Use a MARTINDALE PROTECTIVE MASK

Weighs only 2/5 oz.


PLACE HEAD-BAND WELL UP AROUND HEAD TO KEEP FROM SLIPPING DOWN
PRESS NOSE TABS IN CLOSE AGAINST FACE TO HOLD PAD AGAINST THE NOSTRILS
PRESS EDGES OF FACE PLATE DOWN TO FIT FACE SNUGLY

These aluminum masks are so light and so comfortable to wear that there is no excuse for anyone breathing dust or dirt.

They are effective against all dusts except toxic dusts and asbestos or free silica. Used extensively for paints and enamels that do not contain dangerous pigments or thinner.

Filter pads or refills can be changed in five seconds.

Send $1.25 for a Special Trial Kit containing 2 Masks and 50 Refills.

(Ohio customers add 4c Sales Tax.)

Complete information in Mask Bulletin No. 348.

Martindale Electric Co.

1367 HIRD AVE. CLEVELAND 7, OHIO

BLACK-MAGIC

A National Institution!

Known from Coast to Coast

for

OUTSTANDING PERFORMANCE

in one bath to color iron and all steels except stainless by oxidation at 300° F. BLACK-MAGIC processes for zinc, copper, brass and cadmium are approved for small arms, ammunition, aircraft and signal corps applications.

BLACK-MAGIC (Pat. No. 2355007) permits visual, unerring check on gage wear at exceptionally low cost. BLACK-MAGIC can be easily worked in any plating department.

SILCO

A NEW GLASS-BASE FINISH

Metal finishers need this ideal protective coating for stoves and heaters, exhaust pipes, mufflers, filing cases, etc., for extra revenue. Withstands heat to 1000° F. High corrosion, abrasion and impact resistance. Spray on, dry at 200° F., then bake at 350° F. in any industrial oven. Non-priority. Tests JQD515 QM Dept. Navy and other approvals.

Midwest Field Office,

2651 W. Greenleaf Ave., Chicago 45

BLACK-MAGIC BLACKING SALTS for STEEL, IRON COPPER, ZINC CADMIUM

•

WITCH-DIP WITCH-OIL FINAL FINISHES

•

SILCO PROTECTIVE COATING

•

Cleaners Wetting Agents Acid Inhibitors Heat Treating Salts

•

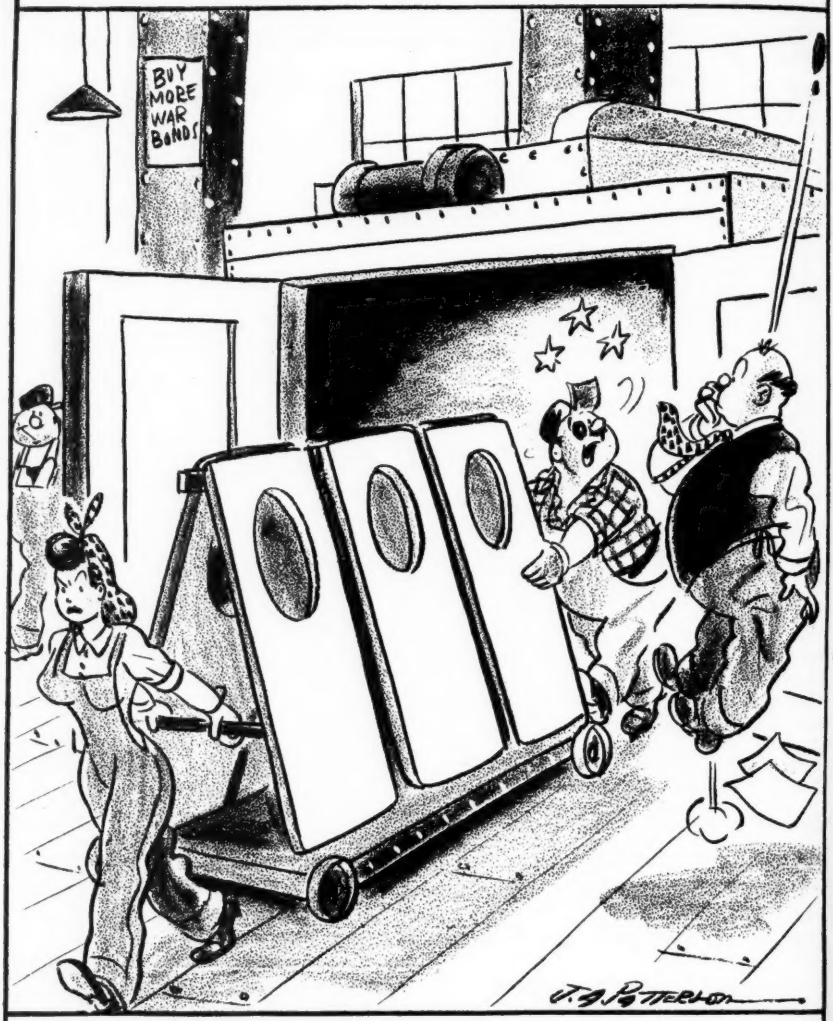
MITCHELL-BRADFORD

CHEMICAL COMPANY

MODERN METAL FINISHES

2446D Main St., Stratford P. O., BRIDGEPORT, CONN.

The Finishing Touch — **By J. A. Patterson**



"I don't think I'm gonna be able to work with this new helper, boss!"